


5-1-1982

### H & V News

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#### Recommended Citation

(1982) "H & V News," *Building Services News*: Vol. 21: Iss. 5, Article 1.

doi:10.21427/D7J989

Available at: <https://arrow.tudublin.ie/bsn/vol21/iss5/1>

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# H&V NEWS



## ● Solar Energy and the Heating Contractor

● Product Report on the Gaelwood 40

● C.I.B.S. News

● HEVAC '82 Preview

● I.D.H.E. News



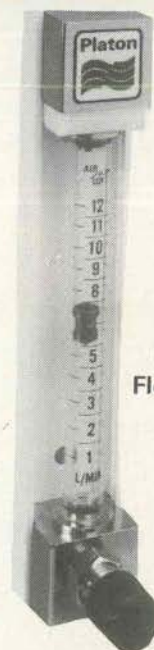
# A Condensed Guide to MANOTHERM activities

## THOMMEN CALIBRATOR EM



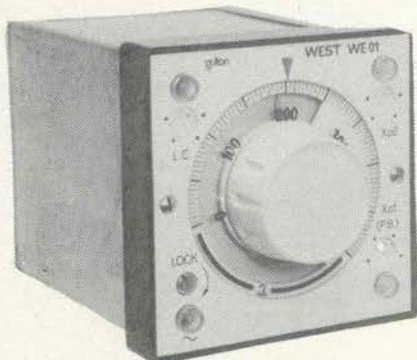
Type EM 421  
410 x 260 x 230 mm  
approx. 8 kg

Indep. from mains Separate power supply 24V D.C.



Platon  
Flowmeter.

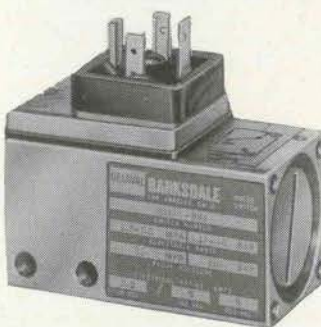
## West WE 01 process controller



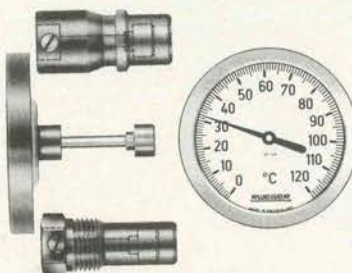
96mm square metal case.

PD+PI control action.

Limit comparator & controlling  
output option.



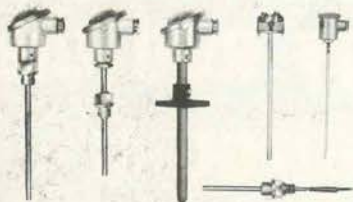
Barksdale piston pressure switch  
for pressures up to 315 bar.



Rueger thermometers.



Platon 'M'—valve.  
Air operated miniature  
control valve  
for automatic  
control of  
most media.



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resistance  
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Phone 645966



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# H&V News

Ireland's Building  
Services Magazine

ISSN 0332 - 2335

published by

## ITTP

Irish Trade and Technical  
Publications Ltd.  
5/7 Main Street, Blackrock  
Co. Dublin.  
Telephone: 885001.  
Telex: 92258



Member of the Trade  
and Professional  
Publishers Association.

Managing Director:  
Gerard J Murphy

Editor:  
Ray Loughran M.I.D.H.E.

Art Editor:  
John Gibney

Sales and Marketing Director:  
Patrick J Codyre

Advertisement Manager:  
Victor Gibson



Irish Heating & Ventilating  
News circulates to key  
executives in the heating,  
ventilating, air conditioning,  
refrigeration, sanitaryware,  
plumbing and environmental  
control industries. Its  
circulation also includes  
architects, designers, sanitary  
engineers, and environmental  
engineers in the 32 counties  
of Ireland.

Subscription Rates:  
One Year £13  
Two Years £18

Printed by Mercury Print Ltd.  
5/7 Main Street, Blackrock,  
Co. Dublin.

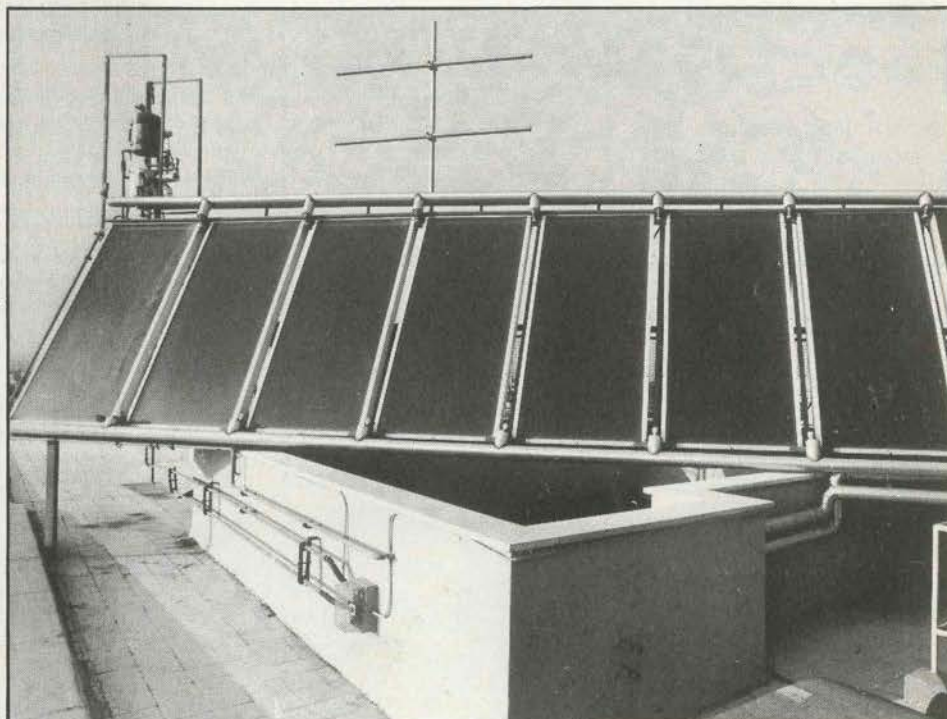
All editorial contents and  
all advertisement artwork  
prepared by the publishers,  
Irish Trade & Technical Publi-  
cations Ltd, 1982.

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Birmingham.

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## NEWS

# Denmark Follows Irish Example

Saving energy through effective management of resources and utilisation is of common vital concern to the Governments of Ireland and Denmark. This was stated by Mr. Sean Murray, Assistant Secretary, Department of Industry and Energy, at the opening of a special conference in Denmark recently, to mark the launch of the Danish Energy Management Association.

"Ireland and Denmark have been historically linked since the seventh century", said Mr. Murray, "and it is not surprising that to-day our common interest in energy conser-

vation serves to consolidate the relationship between our two countries".

Mr. Murray gave the keynote address at the launch of the Danish EMA which has been modelled on its Irish counterpart now in its second year of operation. Towards the end of last year the Danish Government carried out a study of the Energy Management Association in Ireland the success of which prompted the Danes to establish a similar organisation.

Accompanying Mr. Murray at the conference were Mr. Cormac Gordon, Manager, IIRS Energy Services and Mr. Larry

McGriskin, Engineering Manager, P.J. Carroll and Co. Ltd. Mr. Gordon outlined the way in which the Irish Association was formed with the help of bodies such as the C.I.I. and the Trades Unions who are represented on EMA regional committees. He also explained the role of IIRS in the co-ordination of EMA activities which are funded by the Department of Industry and Energy. Mr. McGriskin outlined the benefits to be gained from the Association by industry using P.J. Carroll and Co. Ltd., as a case history.



● Mr. Cormac Gordon, Manager, Energy Services, IIRS, at the special conference in Denmark.

## Butler to Distribute Cosalt Coolair Range

Butler Refrigeration have concluded an agreement with Cosalt Coolair Limited, a major U.K. importer of refrigeration, catering and air conditioning products to distribute their new range of packaged air conditioning units in the Republic of Ireland.

This new range of units, manufactured by Delchi Spa, Italy, consists of a range of split units 9,500 Btu/hr to 27,000 Btu/hr high/low mount, ceiling kits, remote control and heat pump models all ultra quiet in operation.

Window wall mounted units 6,000 Btu/hr to 18,500 Btu/hr electric heat and remote control facilities. Air on and off the rear of all units in the range.

Butler Refrigeration will hold a full range of products in stock in their warehouse in Thurles.

Send for a fully illustrated technical brochure to: Butler Refrigeration Limited, Turtulla, Thurles, Co. Tipperary, Tel: Thurles 22144/22385, Telex: 33080.

## Changes at Thorn EMI

Andy Gallagher, Area Manager for Thorn EMI Heating Ltd., has left the company. Thorn and H&V News all wish Andy every success in his new venture.

Until such time as a replacement is organised, any requests for service and spares should be addressed to Thorn EMI Gas Appliances, Factory D2, Garden Estate, Chapelizod, Dublin 20, Tel: 264001.

Any other business in the short term should be addressed to Mr. E. Martin, Northern Sales Manager, Thorn EMI Heating Ltd., Earlsway, Team Valley Trading Est., Gateshead, Tyne & Wear, NE11 OPG, who will only be too pleased to deal with any enquiries. Watch this space for further developments.

## NEW PREMISES FOR QUADRANT ENGINEERS



● The exterior of the new offices and warehouse of Quadrant Engineers Ltd. at Chapelizod, Dublin 20. The premises was formally owned by Smiths (Distributors) Ltd., distributors of Renault cars and accommodation includes a large store, two storey office area and a large open yard. Their new phone numbers are 265711/265712/265713.



## NEWS

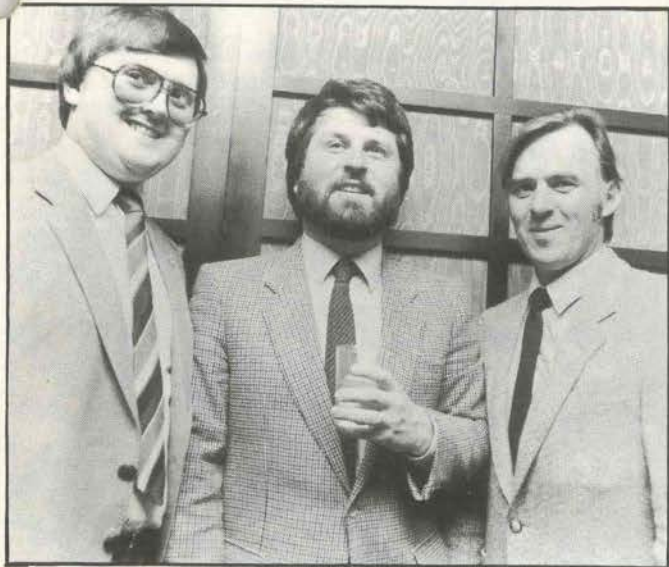


● Tony Hackett, (left) Sales Manager, Chloride Shire Ireland Ltd., together with a colleague from the Dublin distributor of Baths and Bathroom Furniture competed in and completed the Dublin Marathon last October. We picture Tony handing a cheque for £500 to Alderman Alexis FitzGerald TD, Lord Mayor which they collected from various firms during the course of the 26 mile marathon. The cheque was donated to the Stardust Disaster Fund by the Lord Mayor. Chloride Shires Ireland recently completed their move to larger premises occupying over 21,000 sq. ft. on the South side of the city in a prime location, at Broomhill Road, Off Airtown Road, Tallaght, Co. Dublin.

## IRISH H&V NEWS GOES INTERNATIONAL

H&V News have been awarded prestigious ISSN classification which is issued by the International Serials Data System which is a Unesco sponsored body with its headquarters in Paris. This means that H&V News is entered into an international computer system for identification and bibliographical reference. The classification is in the form of an ISSN number which in the case of H&V News is ISSN 0332-2335. This number will from this issue appear on the title page.

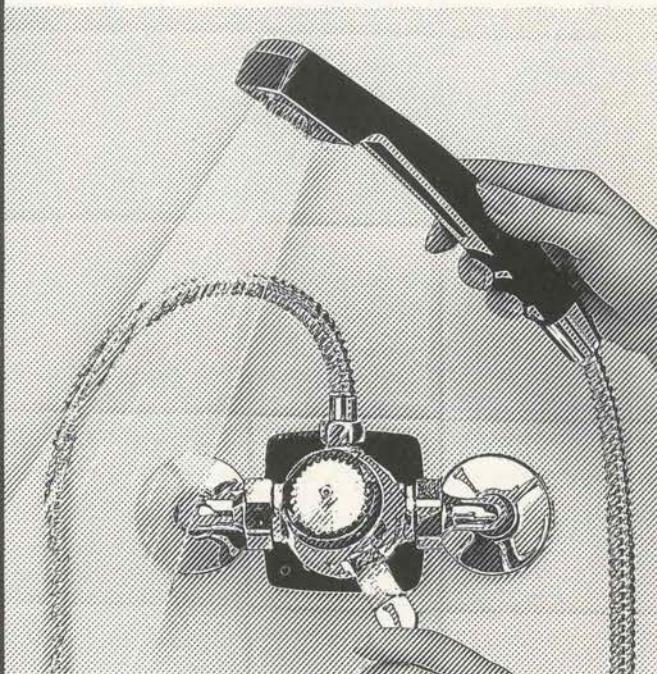
## Tirolia Ras Tailteann



● Pictured at the reception to announce details of the 1982 Tirolia Ras Tailteann were from left: Mr. John Daly, Michael Vaughan Group, Trim, sponsors of the Ras; Hans Nagle of the Austrian Trade Commission; and Uffe Peterson from Denmark.

# IDEALBLEND

**It's surface mounted.  
It overcomes  
liming up problems.  
It's ideal for replacement**



The Idealblend surface-mounted shower has all the performance benefits of the built-in model. No drips from the mixer cartridge when it's off. No wear or corrosion problems. The elegant single lever gives easy positive control. Turn for temperature. Lift for flow. It works beautifully . . . and will carry on working year after year.

The mixing valve consists of two extremely hard ceramic discs which form an airtight, water tight seal. The mechanism of the Idealblend won't lime up even in the hardest water areas! And that's guaranteed! Idealblend's mixing mechanism carries a unique 5 year guarantee against the effects of lime.

**Ideal for the shower replacement market.** It has standard 150mm centres and is designed to match the majority of showers already installed. So when a shower needs re-replacing . . . the new Idealblend fits straight on. 5 Year Guarantee on this ceramic disc mixer cartridge against the effects of lime.



**5 YEAR GUARANTEE**  
on this ceramic disc  
mixer cartridge  
against the effects of lime

Agents in the Republic of Ireland

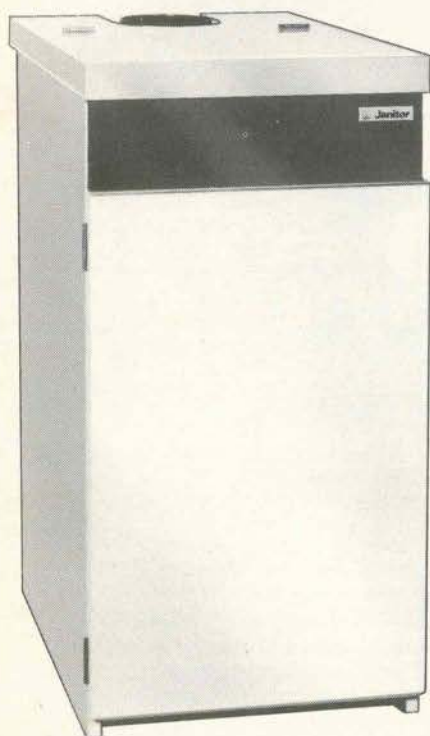


**K. M. REYNOLDS LTD.**  
Unit 2  
D.C. Industrial Estate  
Knockmitten Lane  
Naas Road  
Dublin 12.  
Telephone: 520333

*Ideal  
Standard*



# Janitors



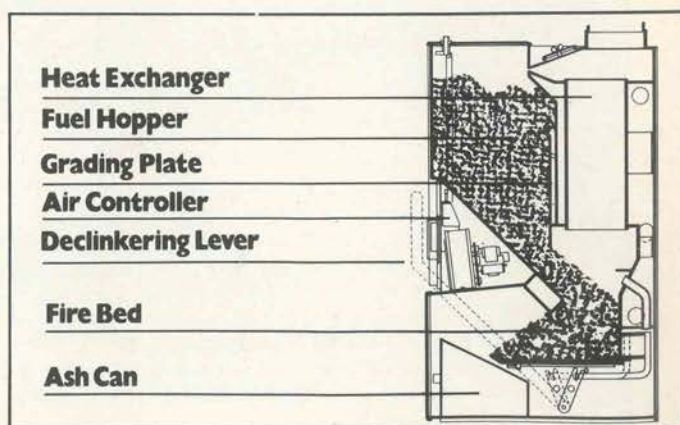
Get a Janitor now! The gravity-feed boiler that's going to clean up on solid fuel, Janitor has got what the competition hasn't got. Its combustion air controller brings absolute control over forced-draught combustion. Copes with flue draughts up to three times normal strength. Does without a flue stabiliser. And allows a fully sealed combustion system to operate.

Result? Greater reliability. Improved use of fuel. Less risk of waste.

## Janitor from THORN EMI gives you the edge in today's energy-conscious market.

The boiler meets strict BS requirements and is DSFAAS Approved. There's a choice of outputs: 45,000 or 65,000 Btu/h. A large capacity fuel hopper; convenient de-clinkering device; ashcan that lifts out safely, and easy maintenance too!

Burning Anthracite or Sunbrite fuels, Janitor brings central heating and hot water with total confidence for your customers. It's even good to look at. In white stove enamel with a black panel and neat aluminium trim.



## Janitor: It's here to clean up on solid fuel.



# are here

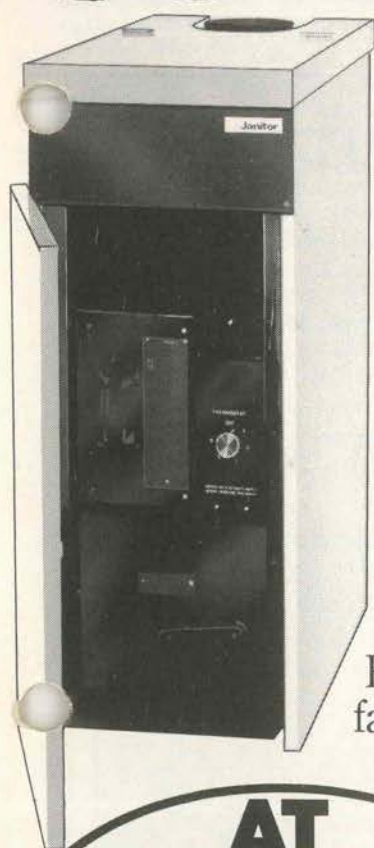


## And you couldn't ask for easier installation.

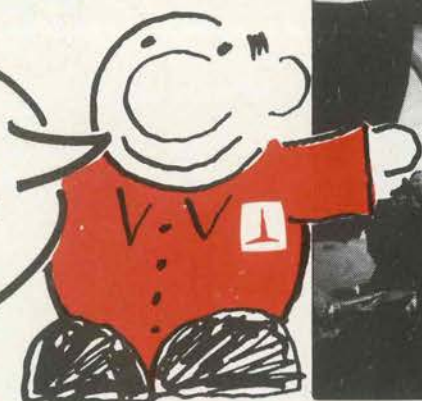
Janitor fits together beautifully. The boiler and white stove enamel casing come in separate packs. Keeping the case safe until it's ready to fit.

## A Janitor's just the job.

AVAILABLE NOW  
AT A VERY  
COMPETITIVE  
PRICE. Ask for the full  
facts on Janitor.



**AT  
HEVAC '82  
STAND IB32  
(AND SFAS  
STAND ID08)**



## THORN EMI Heating Limited

Eastern Avenue, Team Valley Trading Estate, Gateshead, Tyne and Wear, NE11 0PG.  
Telephone 0632 872211. Telex Thor H.Q. Gateshead 53265.



## Successful Training Programme

An independent survey carried out recently among participants in the two weeks programme organised and run by A & I.R. Training Limited, for Walker Air Conditioning Limited, produced an extremely favourable response.

Without exception, all those questioned were delighted with the scope and organisation of the course, based on the Carlyle Technical Development Programme.

For instance "The course was very well organised, with excellent lecturers and very explicit back up material" commented John Lavelle of T. Bourke & Co., Dublin based contractors.

"Well organised in a good location — well worthwhile attending" said Derek Waters of FKM, Dublin.

Chris Ring of E.J. Pettit & Co. felt that it had the advantage over the more usual type of technical course in that the various points were reached quickly with no extraneous commentaries.

From David Jacobs of J. V. Tierney "A very well organised course in a great location which was well worth attending. I found it particularly good on load estimating and psychrometrics".

So successful was this course, held over two weeks in March at the Strand Hotel, Rosslare, that Walker Air Conditioning are seriously considering a second programme later in the year, and anyone interested should contact Mr. Jim Anderson at Walker Air Conditioning's Dublin headquarters, telephone Dublin 300844.

A & I.R. Training Limited, is an AnCO approved company, which means that organisations sending people can receive a grant of up to 50 per cent of the course costs, if they are currently paying an AnCO levy.

## CIBS Annual Students Award

The winning paper at the CIBS Annual Students award sponsored by Temperature Control Services Ltd., was Water Treatment in Swimming Pools by Anthony Walsh.

"The standard was very high again this year" said Gerry Curran of Temperature Control Services Ltd. who as well as sponsoring the event acted as one of the judges. "The subjects taken were very topical with one runner up looking at Legionnaires Disease and this made the decision difficult but in the end Anthony

Walsh's paper proved the winner" said Gerry.

It is hoped to publish the

winning paper in a future issue of H&V News.



● The three finalists in the CIBS Students were (L-R) Dermot Ryan, Anthony Walsh, and Pat McEnroy.

## NEW CIBS COMMITTEE

The Republic of Ireland branch of the C.I.B.S. held their AGM recently and the following committee were elected.

### OFFICERS

**Chairman:** Eamon O'Brien; **Vice Chairman:** Michael Maloney; **Hon. Sec.:** Larry Kane; **Hon. Treasurer:** John Murray.

### COMMITTEE

**J. Owen Lewis, Tony Knott, Shay Diggan, Don Byrne, Bert Taylor, Greg Traynor, Michael McDonagh, Jim Hargin and Gerry Palmer.** Gerry Palmer is to take over the job of Hon. Sec. shortly from Larry Kane and we wish him well in his new role in the C.I.B.S.



● Part of the new C.I.B.S. Republic of Ireland Branch Committee: L-R (standing): J. Owen Lewis, Tony Knott, Shay Diggan, Don Byrne, Bert Taylor, Greg Traynor, Michael McDonagh. Seated (L-R): Larry Kane, Hon. Sec.; Eamon O'Brien, Chairman; Michael Maloney, Vice Chairman; and John Murray, Treasurer. Also on the committee but not in the photograph were Gerry Palmers and Jim Hargin.



## Excellence Award

The Association of Consulting Engineers of Ireland's 1982 Award for Excellence in design of a completed project in civil engineering has been awarded to the Galway city water treatment works designed by H. G. L. O'Connor & Co. of Galway.

The project involved the construction of a new water treatment works on an elevated site at Terryland, beside the River Corrib. This site is located about 1.5 kilometres from the centre of the city and is in full view of traffic entering the city from the east.

The source of supply is the River Corrib and water is being treated at the new works to meet World Health Standards. The project included the construction of an extensive administration and chemical control building, low lift and high lift pumping stations, raw water and clear water tanks, settlement tanks, filter tanks, wash water tower, water recovery tanks, lime silo, roads and services and all associated site development works.

The project is the product of the working of a multi-discipline design office and shows how the civil, structural and architectural aspects can be integrated in designing a complicated engineering problem satisfactorily and aesthetically acceptable.

## Hydraulic Rams — Further News

We recently received the following letter from Mr. J O'Rourke of Chapel St., Sligo, enclosing a copy of the original quotation from John Blake Ltd. the suppliers of the Blakes' "A" hydraulic ram. We reproduce some of the quote below which was dated 19th September 1934 and was addressed to the I.F.S. (Irish Free State?).

The most interesting part was the price which at £122.00 all inclusive of supply and fitting from the UK, seems a steal at today's prices.

### Letter to the Editor

The Editor,  
H&V News.

Dear Sir,

In one of your recent magazines you had an article on hydraulic rams and you were asking if there were any of them still working. I was replacing some 2" pipe on a ram and the owner gave me this quotation for its installation which I have enclosed. Needless to say the new pipe cost more than the original quotation. Also the men came from England to do the job here.

Yours Sincerely,  
J. O'Rourke.

Carrowgarry,  
Ballypodaro,  
Co. Sligo.  
I.F.S.

19th. September 1934

### QUOTATION FOR BLAKES' "A" HYDRAULIC RAM, &c.

Including fixing in or upon the site prepared by the purchaser  
at Carrowgarry.

for water supply to House and the Cow Shed.

**Proposed Conditions of Working of Ram tendered for:—**  
(See letter annexed.)

**Working Fall** - 20 ft. 6 ins.

**Height Water is to be raised above Ram** - to the Douglas Tank or to the existing tank at the top of the house.

**Water in gallons per minute required for driving Ram** - 6.

**Test Quantity of Water to be raised in gallons per day of 24 hours** - at the rate of  
1,800 gallons per 24 hours to the Douglas tank or at the rate of  
1,300 gallons per 24 hours to the house tank.

**Length of Rising Main Pipe** - 2,270 feet of galvanised pipe.

*Handwritten note on left margin:*  
If flow to house tank, water has to be raised  
the house a 120 ft. per day (source of ram 32 ft. per minute)  
10 ft. per day

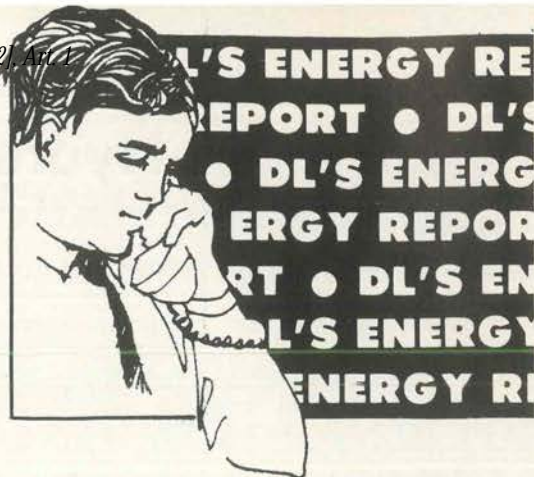
## NATIONAL ENERGY CONFERENCE

● Pictured at the recent 2nd National Energy Conference organised by the Institute for Industrial Research & Standards at the Burlington Hotel, Dublin were (L-R) Martin J. Cranley, Director General IIRS; Robert Jacob, Consulting Engineer, Ilac Centre; David Keane, Architect Ilac Centre and Eamonn O'Brien, Chairman Chartered Institute of Building Services. Messrs. Jacob and Keane read a paper on Energy Management and Saving in the new centre.





# ESB, Oil and LPG Companies to Lose Share of Market



Two articles ago I gave an outline as to the development of the Towns Gas Industry in general and the Alliance & Dublin Consumers Gas Company in particular. I intended to continue in this vein in last month's article, but the problems of the budget and an insistent editor did not allow it. However, in the interim we have seen the giving of natural gas to the Dublin Gas Company (well, almost) by Minister Albert Reynolds. This will be of considerable relief to those who work in the Gas Company and the Gas Company management. It will be of even greater relief to the bankers, provided they can get Dr John Teeling and Donal Kinsella to agree to a financial restructuring at an extra-ordinary general meeting.

It will be a relief to the hard pressed gas consumers in Dublin, who have been paying a high price for gas in recent years. It will be a relief to a reeling industrial sector, crippled with hydro-carbon taxes, high oil product costs and the highest electricity costs in the EEC. It will also be a relief to Kevin O'Leary, Sean Murray and Tom McManus and others at the Department of Energy. The decision to give natural gas to the Dublin Gas Company will not, however, please the E.S.B., the oil companies, or the L.P.G. companies.

They now have a major competitor on their major market because the greater Dublin area embraces Ireland's largest concentration of industry and almost one-third of the entire population of Ireland.

There is no doubting that the share of the energy market for these companies must now decline. Hardest hit will obviously be the L.P.G. companies in that the piping of natural gas to all major towns and cities must mean that they, from now on, will only be peripheral operators. Their domestic and industrial business will decline. They will now only be able to operate outside the main areas, so

one of them may be in trouble in the future. I would imagine that one of their main strategies must rest with a take-over of some of the Towns Gas companies. At the time of writing there are rumours that takeover talks are already underway.

However, all of that is for another day, because it is the imminent decision of the giving of Kinsale gas to the Dublin Gas Company I would like to focus on. In many ways it is a shame that another company other than the "Gas Company" was not on the scene and so provide some competition. Monopolies are a bad thing both for the company involved and for the customer. You only have to look at C.I.E., the E.S.B. and Cement to understand what I mean. However, the "Gas Company" will get Kinsale Gas because they alone have the statutory right to the distribution (via piping) and the sale of gas in Dublin, having been in operation since 1847. They alone have the infrastructure to cope with natural gas and they alone have some of the skilled manpower.

If it is detected that I am less than enamoured with the "Gas Company" — you're right. As I have previously explained, the apparent lack of management leadership at the Gas Company since the departure of N. J. Robertson does not leave one with much enthusiasm. The present management has a tendency to blame the "Robertson era" for all its ills. If so, it does not say much for the blue blood Board of Directors of the day. Are they saying that Professor Purcell and James Davy, the then Chairmen, completely subordinated their views to N. J. Robertson. I doubt it. So, while some of the blame on the decision to use naphtha can be pointed to the "Robertson era" and maybe some of the restrictive type labour practices, the fact is that the present management and Board has been there for some time.

Since the end of the "Robertson era", we have seen:-

- prices to the customer going up from 14p in 1974 to 100p in 1981,
- gas sales declining from 36 million therms in 1974 to 24 million therms in 1981,
- the number of consumers declining from 158,000 in 1974 to 148,000 in 1981,
- a collapse in their industrial business and a decline in the much vaunted two-part tariff heating business,
- no attempt to cope with the expansion of Dublin, plus a drop in their existing residential market, down from 30 million therms in 1974 to 20 million in 1981,
- no dividends declared for a number of years and the company living on their bankers.

During this period a Government subsidy was sought and received. Yet this is the team that now gets Kinsale Gas. Of course, management will claim a new comprehensive labour agreement. One would imagine that Paddy Cardiff, or more particularly Tom Crean of the F.W.U.I. had nothing to do with it. Anyhow, I will wait until we see the agreement put into practice. To date, all we have been treated to is a going back to the old style "district" arrangements. A district is specific area in Dublin whereby all work in that area is supervised by a District Inspector. Up to the end of the sixties, Dublin Gas segmented Dublin into a number of districts and had depots in Rathmines (beside the old Princess Cinema), Dun Laoghaire and Bray. Subsequently with the help of a well-known management consultancy firm (I won't reveal the name) a more "organised" district system was put into operation.

The result of this curious decision was to take away decision making from the engineer in charge of installation and give it to district clerical officers. From here on it degenerated into a Marx Brothers-type farce. For example, if



you wanted a cooker installed, your first visitor from the "Gas" was a measuring-up inspector. He measured up and in turn discussed the job with the district chertical officer, who monitored the sending out of material and the timing in sending out a gas fitter to fit the cooker. When the gas fitter eventually arrived and completed the job, he in turn informed the clerk who sent out another inspector to see if it was satisfactorily installed. That was three visits from three different people just to get a cooker installed and that was on the assumption that they got it correct in the first place. If, however, your cooker broke down, that could not be fixed by the fitter who called, but only be a maintenance fitter and you had to report it to the maintenance department. If you had another gas appliance like a central heating boiler, your complaint went to the special maintenance department under a special maintenance inspector. All in all, it was a mess. There is no doubt that it could have led to serious industrial relations problems but for the guile and expertise of the late Personnel Manager, Mr. C. McGrath. It is, therefore, no

wonder that in recent times practices reverted back to those of the old days. The question is, did a consultant suggest reverting back?

If, however, the problems on the "district" sound bad, then I won't go into the detail of the distribution department and those of Barrow Street (where the gasometers are). All I will say is that they were worse than those of the district, and that's bad. So whilst much song and dance has been made about a comprehensive labour agreement that still doesn't mean to say that even that will be satisfactory because the position was so bad to begin with.

In the meantime musical chairs have been played by top management. On the retirement of Mr. N. J. Robertson, Mr. L. Allen became General Manager. We then had the appointment of Mr. D. MacAleese as Chief Executive. He in turn proceeded to make radical changes within the company's executive.

Mr. L. Allen resigned as did Mr. F. Higgins, who had become Chief Engineer at the Pearse Street Works on the promotion of Mr. Allen, to join Squibb (Ireland). His function

as Chief Engineer was carved up among other people. The personnel function (always a problem) held in the early seventies by the late Mr. McGrath, was then held by Mr. F. May. Today it is held by Mr. Hynes an ex-Guinness employee. The enigmatic Company Secretary, Mr. J. O'Brien, retired and was replaced by Mr. McGrath. In recent years his position, that of Company Secretary, is held by Mr. Donnelly. The installation engineer, Mr. Apsey, retired and was replaced by Mr. C. Davies, who in turn decided after a reasonable time to leave and join the IIRS. The head of distribution was a new post created and Mr. L. O'Halmhain, ex IIRS, was appointed. Recently he now finds himself reporting to a new employee, Mr. G. Little. The marketing function, always also a problem for the Gas Company, was held in the early seventies by the late Mr. W. Stokes. He in turn was replaced by a long time employee, Mr. E. Clancy. In turn Mr. Clancy was superseded by a Mr. J. Owen and recently the company has appointed a new marketing boss,

continued on page 40

# FINHEAT LIMITED

## Sole Agents & Distributors for:

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sealed systems & booster  
sets

**BRAITHWAITE & CO.  
STRUCTURAL LTD** —  
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tanks

**DIFFUSION RADIATOR  
CO LTD** — overdoor air  
curtains

## FENBYRN

**MECHANAIRE LTD** —  
powered ventilation

**MATTHEWS & YATES  
LTD** — air handling units  
& centrifugal fans

**Myson /R.C.M.** — grilles,  
registers & diffusers

**S & P COIL PRODUCTS  
LTD** — fan heaters & heat  
recovery units

# FINHEAT LIMITED

16/17 Usher's Island, Dublin 8. Tel: 778109/778120/728431 Telex: 30751



## A TURNING POINT IN DOMESTIC HEATING

The competition for a multifuel inset stove, organised by the Department of Energy and the N.B.S.T. early last year, is now generally recognised within the industry as a timely and successful undertaking. The first prize winning stove, the Gaelwood 40, was publicly launched at the Spring Show. It is no exaggeration to say that the advent of this stove is at least as much of a turning point as was the advent of the high-output open fire boiler, five or six years ago.

The open fire back boiler gave the public a taste for solid fuel heating from their living room fireplace and, over the last five years an estimated one hundred thousand, plus, of these units have been installed in this country. The benefits of low running costs, a choice of readily available fuel in small quantities if

required, plus the fact that a centrally sited appliance implies no heat losses outside the house — all these points were in the favour of the open fire boiler.

In the last year or two there has, however, been some degree of disillusionment. At any rate there has been a demand for something better. The high output back boiler has suffered because of "cowboy" manufacturers, often using only 3mm steel thickness, and from unrealistic output claims — 50,000 Btu/h or even more. (It has also suffered, of course, from "cowboy" installers but this can occur with any appliance). The high output back boiler has probably also declined in popularity because of its limitations, four to five average radiators plus a modest hot water supply is all that may be expected and while overnight

burning is quite possible if the correct type of fire is used output will be very low. None of these points should be overstated. There are many thousands of extremely satisfied back boiler users and a very good job has been carried out by Coal Information Services who have promoted the use of the appliance while firmly sticking to the facts and discouraging false claims.

While appliance efficiency has never been at the top of the average buyers list of priorities there is a general awareness now that a closed appliance gives more heat for your money than an open one. It is also generally appreciated that a good closed appliance will remain alight for much longer periods without attention. There has, therefore, been a substantial increase in sales of imported "fires behind glass", the

limitation here is that, until recently, only smokeless fuel could be used. Anthracite and carbonised fuels, all of which have to be imported, are not only expensive, in many areas of the country they are also very difficult to get. Hence the competition to encourage the design of the best possible fire behind glass that will burn almost anything.

It may seem easy to burn a wide range of fuels, in fact you can do this on an open fire. To do so efficiently is quite another matter and to do so behind glass is really difficult. The Gaelwood 40 uses a down burning system patented by Multifuel Heaters Ltd. in many countries. It is worth noting that, since this system has been patented and the tremendous advantages in increased efficiency, longer burning periods, and reduced smoke emission





have been recognised, quite a lot of people are now claiming to "down-burn" appliances. On examination it will be found that none of these brings the combustion products vertically down through the fire-bars, most of them use some system that involves combustion products leaving just above the fire-bars. Not as good a system as the Gaelwood vertical burning technique but a good deal better than the methods of ten or fifteen years ago!

The same technique that has been used for several years with the Conserva and the Gaelwood 65/90 works equally well in the Gaelwood 40, as confirmed by the I.I.R.S. and, of course, judging panel. Therefore, for the first time there exists an efficient inset closed fire that works well on turf or wood as well as coal, or of course, smokeless fuel.

Another important feature is the warm air circulation around the appliance. The outer surface of the stove is not unduly hot. In fact the front is even double-glazed, which substantially reduces the risk of contact burns that is present with other stoves. Despite this the direct heat to the room in which the appliance is sited, approximately 2 Kw, is much more than with other inset stoves and will generally save the output of a radiator in the room where it is sited. With sufficient heat for the living room and well over 30,000 Btu/h available for the radiators and hot water system the Gaelwood 40 can be relied upon to meet full heating and hot water needs for the average small house.

The freestanding version gives the same overall performance plus a safely enclosed cooking top as well. Both versions are being formally launched in time for the Spring Show.

While the art of prophecy is a dangerous one it is probably safe to forecast that it will be a long time before anything as significant and important as the Gaelwood 40 is again produced in the domestic heating field.



● Mr. P. Walsh (left) Manufacturing-Technical Director and Mr. L. Carr, Marketing Director, Wavin Pipes Limited, study the first gas pipe to be manufactured in Ireland. Wavin Pipes Limited, Ireland's largest manufacturer of pipes and fittings has commenced production of the first gas piping to be manufactured in this country. The company has supplied gas pipes to Waterford Gas for a pilot scheme and expect to lay pipes for Kilkenny Gas shortly. The WavinGas system is used in the U.K., Holland, Germany, and other European countries as well as North Africa. The system has been installed by Cair-Kosangas for many years in Ireland. Wavin hopes that from a home market for gas pipes, it can develop the export potential of its gas system.

## New Heat Pump Guide

The Heat Pump Association now has available its Commercial and Industrial Energy Savers' Guide to the Heat Pump. This four page A4 brochure complements the HPA's existing guide for the domestic and small commercial user.

The new guide covers in question and answer form a range of the kind of enquiries the Association has been getting in the last year when the interest in heat pumps has been growing. It is intended as a quick introduction for management and specifiers to help them understand the principles and range of equipment available. A table is included which gives a rough guide to the size of heat pump likely to be required (subject to survey). A list of installers and manufacturers is also supplied.

Further copies are available from the Heat Pump Association, 161 Drury Lane, London WC2 (please supply A4 s.a.e.).

## ESB HEAT RECOVERY PROJECT

A new six-storey office development being built for the ESB at East James Street, Dublin, has become the first Irish office complex to use a novel energy-saving heating system.

The 111,000 sq. ft. building was "topped out" by ESB director, Mr. J. P.

O'Donoghue. Designed by architects Stephenson & Associates it is fully air-conditioned and features a heat recovery system which allows heat to be recycled. Compared to other forms of heating this system is said to offer greater efficiency and lower energy costs.

## IDHE TECHNICAL EVENING



● Pictured at the recent IDHE technical evening on Solar Energy and the heating contractor were (L-R) Gerry Griffin, Harry Pattison, Dr. Ian Cowan, Kevin Kavanagh, and Gordon Brickenden. The full text



**Dr. Ian Cowan is an Alternative Energy Specialist with the Institute for Industrial Research & Standards and at a recent IDHE technical evening he gave the following lecture on solar energy applied to the heating contractor.**

# Solar Energy and the Heating Contractor

## 1. Introduction

In discussing the use of solar energy for the provision of heating in buildings, a distinction is usually made between so called 'active' and 'passive' systems. Active systems are systems usually integrated with a conventional-type heating system and include components such as pumps and fans which themselves consume energy. Passive systems, on the other hand, are merely concerned with the design of the building to maximize solar gain by optimizing orientation, building South-facing solar walls and conservatories, and providing adequate structural thermal storage and insulation. As passive solar design clearly falls in the domain of the architect (although, of course, not exclusively so), I propose to concentrate on active systems in this paper.

Active systems can in turn be split into those providing space heating, and those providing hot water. In dwellings, where low-temperature solar applications will find their first important applications, the provision of domestic hot water has many advantages over the provision of space heating, due primarily to the relative simplicity of hot water systems, the fact that such systems can easily be incorporated into existing houses, and the necessity of providing heating throughout the year, especially in the Summer when radiation is highest.

## 2. Energy Availability

The sun, which is the source of all life on this planet, is a giant nuclear reactor which produces energy by the fusion of hydrogen nuclei into helium at the comfortable mean distance of about 93 million miles from us. Its power output is  $3.8 \times 10^{20}$  MW and its temperature varies from  $5700^{\circ}\text{C}$  at the surface to  $16,000,000$  at the centre. It is losing mass (through conversion to energy) at the rate of  $4\frac{1}{2}$  million tons per second, but you will be glad to hear that although the age of the sun is estimated at around 5 billion years (American billion = 1,000 million) its present life expectancy is a further 10 billion years.

These are very interesting figures,

but the figure of more relevance to us is the Solar Constant, defined as the energy reaching a unit surface in unit time just outside the earth's atmosphere. The currently accepted value is  $1.353 \text{ kW m}^{-2}$  but atmospheric attenuation reduce this to about  $1 \text{ kW m}^{-2}$  at the earth's surface. Now this is the maximum available power under clear sky conditions; obviously clouds reduce this somewhat. Under cloudy conditions, the radiation becomes scattered by the sky and ground, but nevertheless, it still reaches us. This so called diffuse radiation is not so apparent to us as the direct kind, and the fact that over a year in Ireland, about 60% of the sun's energy reaching us is in diffuse form might explain why it is frequently thought inconsiderable.

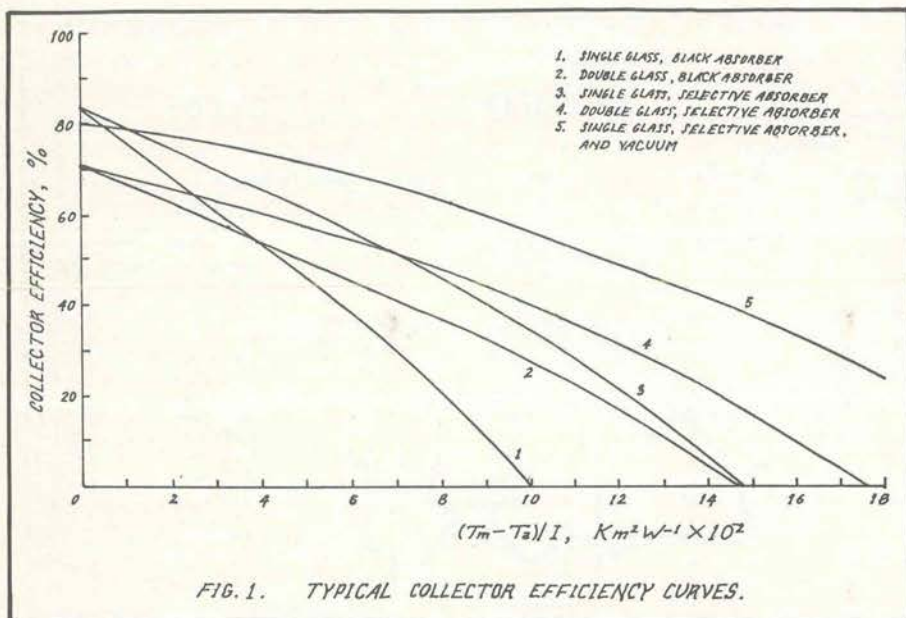
In fact, on average, one square metre of horizontal surface will receive about 1000 kWh of energy per year in Ireland. An optionally tilted surface oriented south might receive up to 20% more, and as the comparable figure for Arizona, USA (which is one of the most favourable locations on earth) is 2200 kWh, we reach the perhaps surprising result that in this country we enjoy no less than half the radiation received in the world's most favourable locations (1).

## 3. Collection of Energy

The method of collecting the sun's energy by thermal means is to use a solar panel or collector. There are many different types of panel, but the most common and basic one is the flat-plate collector consisting of a blackened metallic absorber plate with water channels embedded in or behind the plate. Radiation strikes and is absorbed by the plate which heats up, and this heat is taken away by the fluid which is circulated in the aforesaid channels. The solar radiation incident is short wave (i.e. wavelengths less than about 3 microns); however, as the absorber plate heats up, it emits long-wave radiation, but this is trapped by a glass cover which, although permitting short-wave radiation through, is opaque to long-wave radiation. This is the so called 'greenhouse effect'. In order to limit heat loss by conduction from the heated collector, back and side insulation is provided.

The efficiency of a solar collector is usually plotted against the difference between the temperature of the circulating fluid and ambient, divided by the incident radiation level. An almost linear relationship is found the efficiency dropping off as the





temperature difference between, and hence heat losses to, the surroundings increases, and as the available radiation decreases. Due to the variability of operating conditions and weather, the seasonal efficiencies obtainable lie in an intermediate position — perhaps around 30%-40% for a typical flat-plate operating system. Fig. 1 shows efficiency curves for some different collector types.

#### 4. Domestic Hot Water Systems

Solar heating systems for the production of hot water are relatively simple and can be easily integrated with existing systems. The usual circuit in existing houses comprises a primary loop with the panels plumbed into a storage cylinder which feeds the existing hot water cylinder instead of the mains, and thus causes preheating. If the existing cylinder has sufficient storage capacity, or if it can be replaced easily, it is possible to use a dual storage vessel with the conventional heater (electric immersion and/or central heating coil) in the upper part and the solar heat exchanger in the lower part. As a general rule for separate storage, the vessel should have a capacity of about 50 litres for every square metre of collector.

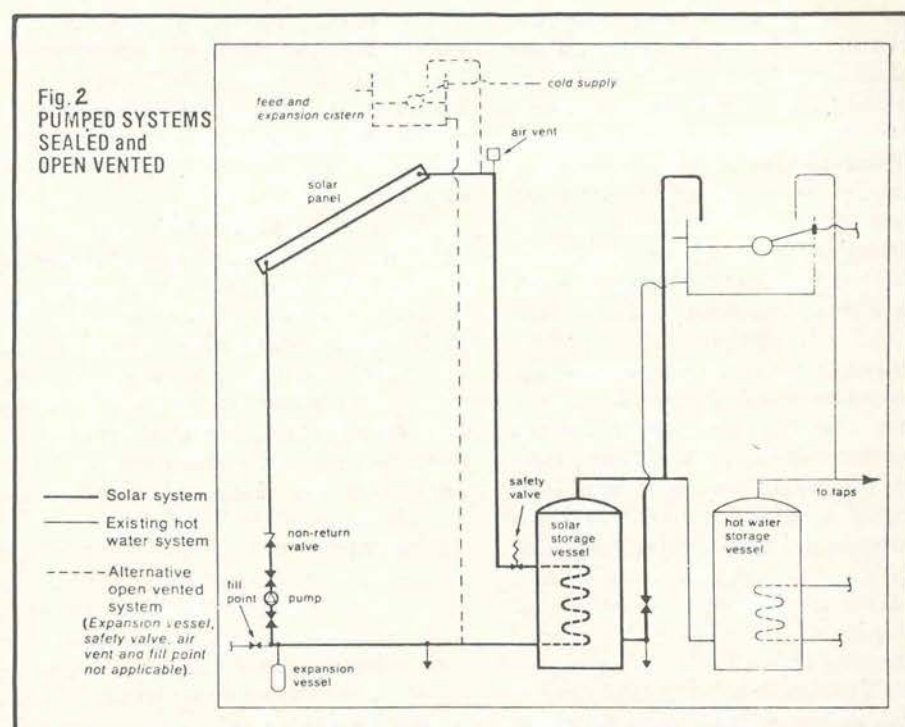
What area of collector is required? Well, this obviously varies with particular cases, but it is found that for an average daily hot water requirement of the order of 200 litres at 60°C, requiring around 4000 kWh per year, an optimal collector area of around 4m² to 5m² would provide 30% to 50% of the load depending upon system efficiency. System efficiency depends on collector type and circuit design, but is very unlikely to exceed 40%, and recent studies of

monitored installations would indicate this to be a very high figure (2). A recent British Standards Institution Code of Practice classifies collectors in five categories — I to V — depending on the range of solar energy collections per year (3). Single-glazed collectors with a matt black surface would in class IV in general, while those with a selective surface would be in class III, there being a difference in energy producing capability of the order of 20% between these two classes. The best angle of tilt for domestic hot water systems is about 10° to 15° less than the latitude of the location. Most pitched roofs are suitable in our location.

The simplest type of system is a thermo-siphon, one which can be used if the storage unit can be placed

above the collectors (600 mm minimum between top of collectors and bottom of store). This type of system also has the advantage that circulation is only possible when the collector temperature outlet is higher than that of the store so that no cooling effect can apply at night or at times of very low or no insolation. An added precaution is to fit a non-return valve on the primary circuit to obviate any possibility of reverse circulation. A pumped system can be used more generally, a small circulation pump providing a flow of approximately 50 litres per hour per square metre of collector. Such a system needs a small differential thermostat to switch the pump on and off as required.

The system can be opened vented or sealed. Fig. 2 shows the basic schematic for both types of pumped system. As a protection against boiling which could occur at times of high insolation, an open safety vent in the case of an open system, or a safety valve in the case of a closed system must be fitted in addition to the usual feed and expansion cistern or expansion vessel. As a protection against freezing of the water in the panels in winter an indirect system with an antifreeze solution similar to that used in automobile engines — e.g. a 30% ethylene glycol in water solution — is frequently used. The use of anti-freeze also has the advantage that the solution contains a corrosion inhibitor, which helps protect the primary circuit. An alternative is to use a drain-down system. Yet another solution is to use a mineral oil heat





transfer fluid which has a low freezing point. This freezing protection is more important than might at first sight appear. The collectors will at night behave as emitters, and on a very clear black night, the water in the collectors can be cooled a number of degrees — perhaps 5°C or more — below ambient so that freezing can occur even when ambient air temperatures are above zero.

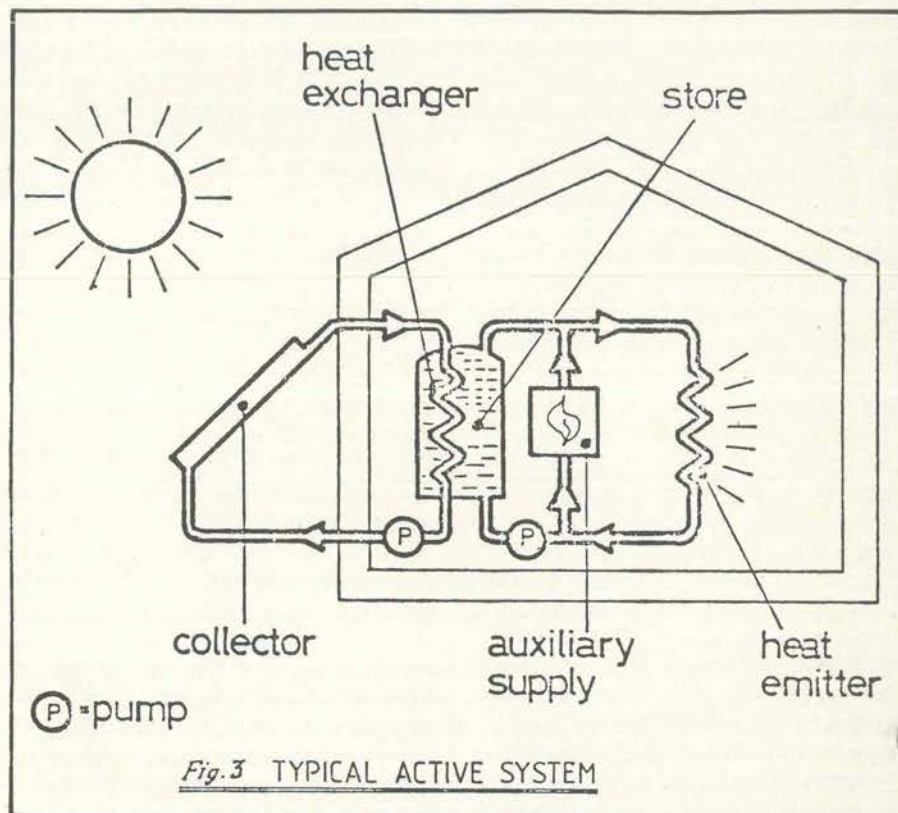
When using indirect systems, adequate area of coil should be provided for heat transfer to the secondary circuit. As a guide, about 0.25 m<sup>2</sup> of coil surface area should be provided for every square metre of collector surface.

Detailed discussions of the various possibilities for domestic hot water systems and consequent problems are given in a Building Research Establishment publication (4) and in a Guide to Good Practice published by the U.K. Heating and Ventilating Contractors' Association (5).

### 5. Economics of Domestic Hot Water Systems

In order to assess the economic viability of solar heating systems on the macroeconomic level, regard must be had to our high dependency levels on imported fuels, and non-availability of alternatives. These factors tend to favour solar heating in our case more than is the case with some of our neighbours — for example, the U.K. or the Netherlands. On the microeconomic level, however, the situation is less favourable and this is partially due to the fact that we have not at present an established solar industry with mass markets which lead to cost reduction. However, such cost reduction is needed before mass markets can be established. It is thus necessary to break this vicious circle somewhere, and one suggestion is to follow US policy in some states of providing grants and tax credits to persons installing solar heating systems for an initial period, until the establishment of a wide-spread solar industry renders it self-sufficient.

In the meantime, a simple economic analysis using the results of \$4 above would indicate the following maximum savings. Assuming 1200 kWh per square metre of optimally oriented collector for the incident solar energy, a total area of 4 m<sup>2</sup>, and an efficiency of 30%, a yearly savings of 1600 kWh could be achieved. Assuming this to displace direct electric heating this would represent just over £100 per annum; the actual saving would in most cases be much



less due to the use of another fuel, for example, gas oil at about half this price when operating in conjunction with a 65% efficient boiler during the heating season. This would yield annual savings of about IR£65 assuming use of direct electricity for five months of the year. Fuel prices here used are those for January 1981 published by the IIRS i.e. 6.40p/kWh for direct electricity.

Taking a current figure of IR£1,500 for installation of such a system, it is seen that not a very high return on investment accrues. Claims are frequently made of extremely high rates of increase of fuel prices which appear to make investments of this kind more attractive than they really are. Economic analysis must consider the time value of money, and offset fuel price increase rates against the general inflation rate applying so that savings in real terms can be obtained. Assuming a zero discount rate for the individual (i.e. there are no alternative investment opportunities), and a 5% annual fuel price increase rate in real terms, the payback periods for the two scenarios represented above would be 11 years using electrical heating throughout, and 15 years using the oil/electricity combination.

Despite this rather gloomy picture, it can be said that components costs are probably decreasing in real terms, and a view of the situation in a few years' time may present a more favourable picture.

### 6. Swimming Pool Heating

Swimming pool heating by solar energy is one of the most viable applications due to the low temperature requirements. Collector having no glazing or insulation are practical due to the small heat losses occurring. This helps to reduce installation cost. It is recommended that the pool be covered when not in use, particularly at night when considerable cooling can occur. A collector area of between half and three-quarters the pool surface is appropriate in most cases. Conventional back-up heating will of course be necessary for indoor pools used during winter.

Most systems are direct — that is, the pool water is circulated through the collectors and this obviates any heat exchanger losses. Both copper and polypropylene panels have proved satisfactory, but special attention to manufacturers' instructions is necessary, where special compounds are used for sterilization, to prevent possible corrosion problems with copper. A further discussion can be obtained from reference (4).

### 7. Space Heating

The use of solar energy for the provision of space heating requires integrated design with the building and auxiliary heating system, and should preferably be considered at the building design stage. Such a heating system comprises a primary collector circuit, a solar store, and a secondary circuit comprising heating



emitters and auxiliary energy supply as illustrated in Fig. 3. The auxiliary heater can be placed in parallel as well as in series with the solar installation, and the distribution can be by liquid or warm air. The latter will usually ensure better utilization of the available solar energy due to the lower distribution temperature required. Thus, the solar storage can be employed down to a number of degrees above room temperature which is not possible with a wet distribution system.

The optimal solution to the problem of system design is to provide a fraction — perhaps up to 50% — of space heating requirements over a heating season. Designing to provide any further requirements leads to over-capitalization on the system and diminishing returns on investment. Depending upon level of house insulation — and the house should be very well insulated before the installation of a solar space heating system is considered — a total collector area of perhaps 25 m<sup>2</sup> to 40 m<sup>2</sup> would be required for most dwellings. Adequate storage should be provided to store heat over a couple of days which are dull, and this means using a water store (the most common) of say 3m<sup>3</sup>

to 5m<sup>3</sup> capacity, or equivalent.

As well as providing controls for the primary circuit, more complex controls than are used with domestic hot water systems are required to control the solar and auxiliary systems and the relevant components such as three-way diverter valves or fans and dampers.

Fig. 4 shows a solar system designed at the Institute for Industrial Research and Standards for a controlled pilot test facility in which the secondary circuit is simulated by a microprocessor-controlled heat exchanger. The heating system uses warm air as the distribution medium, and the results of this monitored installation are being used to provide a validated design procedure for the design of efficient solar heating systems under our climatic conditions (6).

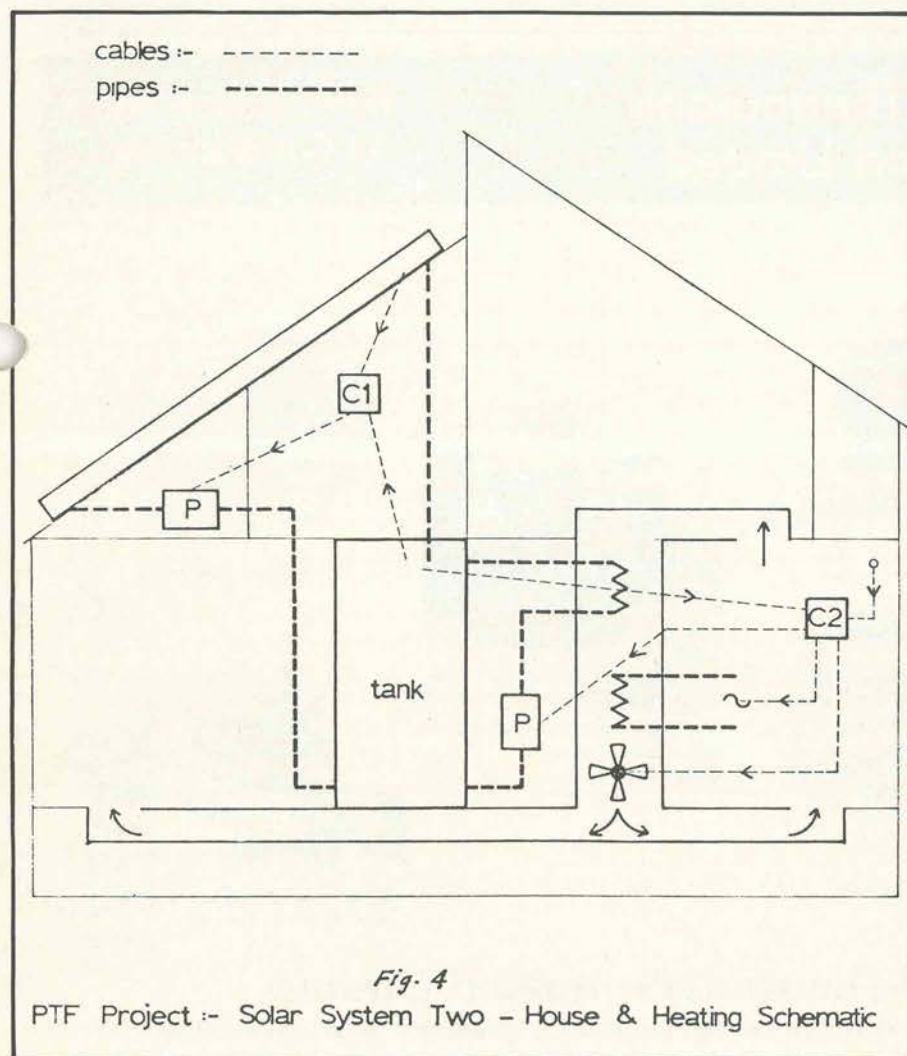
Other types of collectors using air as the heat transfer medium are being studied in conjunction with rock storage for solar space heating systems in dwellings. Such systems have some advantages over liquid systems such as lower operating temperatures and hence smaller heat losses, and significant temperature stratification effects in the rock store which ensure a lower return to the

collectors and hence a higher operating efficiency. Among the disadvantages may be mentioned difficulty in reducing air leakage down to acceptable levels. Cement Roadstone Holdings Ltd. are currently building three prototype houses of this type for experimentation, and if the results are favourable, further houses of this type will be built.

Another system uses a chemical store which contains a salt hydrate which melts on heating, and gives the latest heat of fusion back on cooling, the fusion point usually being around 30°C. There have been some problems in the past with incongruity and stability of these chemicals after repeated cycling, but many of these problems have been solved, and the Calor Group Ltd. are currently offering such a system and have installed one in a house in Dublin which, although similar to ones already installed in Milton Keynes and in Edinburgh, is larger, including a collector array of 40 m<sup>2</sup>.

As might be expected, the current economics of solar space heating systems are even less favourable than is the case for domestic hot water systems. System and installation costs at the current embryonic state of development are high, and most of the heat requirement occurs when solar radiation is lowest — in winter. For these systems the collectors are usually tilted at about 10° to 15° greater than the latitude of the location (compare with domestic hot water system §4) so as to catch the sun when it is low in the sky. The results of detailed studies related to the potential use of solar energy for space and water heating have been published by the IIRS (7).

Utilization of the summer sun involves seasonal or long-term storage using buried rock or water stores and this may be the solution adopted in the future. Seasonal storage is necessary if practically full space heating from solar energy alone is required. The Swedes have taken an active interest in this, and have established a number of grouped houses and combined solar/heat pump systems with seasonal stores. The most recently completed scheme is at Lamböhov about 200 km south-west of Stockholm and is designed to provide 90% of the annual heating requirements of 55 grouped houses using a store about 100 times as large as a short-term store for one house (8).



## 8. Industrial & Commercial Systems

Under the classification of industrial and commercial solar systems may be



mentioned large hot water producing systems for hotels, hospitals, office blocks, etc., as well as heating or cooling for space conditioning or industrial processes. Industrial processes which require hot water at high temperatures or steam, can be coupled with high-performance collectors such as evacuated-tube collectors which can produce heat at well over 200°C. Cooling requirements can also be met by coupling solar collectors to absorption-cycle refrigeration machines. As the coefficients of performance of such machines are low, it is usually required to use high-performance collectors for this application also. This application of the technology is exciting for warmer climates where space cooling requirements exceed those for space heating, and where the cooling loads occur in phase with the times of greatest insolation.

#### 9. Conclusion

I have tried to indicate some of the future possibilities for the employment of solar energy for heating (and cooling). The discussion is not exhaustive and there are active national

programmes concerned with research, development, and demonstration of solar thermal technology currently progressing.

Although current economics for solar heating installations in Ireland are not very attractive, it behoves us to involve ourselves in and acquaint ourselves with, the results of up-to-date research so that if and when the situation improves, we shall not be lacking in our ability to implement the technology where appropriate. In this regard, we are actively engaged in the solar thermal research and development programme of the Commission of the European Communities, and hope to play a major role in advising government and policy makers on the establishment of a national programme in this area.

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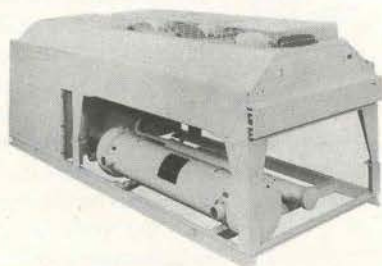


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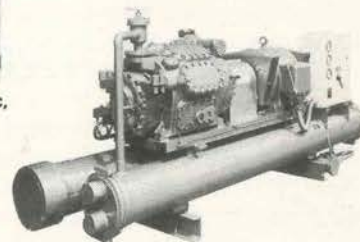
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# Comparison of Useful Energy Costs Domestic Heating



| FUEL        | Form                        | Delivered Cost | Useful Costs (p/kWh) for Different Appliances |      |  |      |                      |      |                       |      |                      |      |                 |      |                |
|-------------|-----------------------------|----------------|---|------|--|------|----------------------|------|-----------------------|------|----------------------|------|-----------------|------|----------------|
|             |                             |                | Roomheater, Freestanding Boiler, Cooker       |      | Open Fire with High Output Back Boiler |      | Open Fire            |      | Flued Gas Room Heater |      | Boiler/ Burner       |      | Electric Fire   |      | Storage Heater |
|             |                             | p/kWh          | Efficiency 45% + 55%                          |      | Efficiency 30% + 40%                   |      | Efficiency 20% + 30% |      | Efficiency 75% + 82%  |      | Efficiency 65% + 75% |      | Efficiency 100% |      | Efficiency 90% |
| Peat        | M/C Turf                    | 0.84           | 1.87  | 1.53 | 2.80                                   | 2.10 | 4.20                 | 2.80 | 1.12                  | 1.02 | 1.29                 | 1.12 |                 |      |                |
|             | Briquettes, Baled 80        | 1.00           | 2.22  | 1.82 | 3.33                                   | 2.50 | 5.00                 | 3.33 |                       |      |                      |      |                 |      |                |
|             | Briquettes, Retail          | 0.91           | 2.02  | 1.65 | 3.03                                   | 2.28 | 4.55                 | 3.03 |                       |      |                      |      |                 |      |                |
| Coal        | House Coal                  | 1.25           | 2.78  | 2.27 | 4.17                                   | 3.13 | 6.25                 | 4.17 |                       |      |                      |      |                 |      |                |
|             | Continental Anthracite Peas | 1.65           | 3.67  | 3.00 |  |      |                      |      |                       |      |                      |      |                 |      |                |
|             | Standard Anthracite         | 1.63           | 3.62  | 2.96 |  |      |                      |      |                       |      |                      |      |                 |      |                |
|             | Rexco                       | 2.23           | 4.96  | 4.05 |  |      |                      |      |                       |      |                      |      |                 |      |                |
|             | Phurnacite                  | 1.91           | 4.24  | 3.47 |  |      |                      |      |                       |      |                      |      |                 |      |                |
|             | Extracite                   | 1.76           | 3.91  | 3.20 |  |      |                      |      |                       |      |                      |      |                 |      |                |
|             | Grade A Anthracite          | 1.80           | 4.00  | 3.27 |  |      |                      |      |                       |      |                      |      |                 |      |                |
| Oil         | 35 sec. Gas Oil             | 2.08           |   |      |  |      |                      |      |                       |      | 3.20                 | 2.77 |                 |      |                |
|             | Kerosene                    | 2.46           |   |      |  |      |                      |      |                       |      | 3.78                 | 3.28 |                 |      |                |
| Gas         | Bottled L.P.G.              | 3.82           |   |      |  |      |                      |      | 5.09                  | 4.66 |                      |      |                 |      |                |
|             | Towns Gas:                  |                |   |      |  |      |                      |      |                       |      |                      |      |                 |      |                |
|             | Two Part Tariff             | 4.95           |   |      |  |      |                      |      | 6.60                  | 6.04 | 7.62                 | 6.60 |                 |      |                |
|             | Full Rate                   | 5.88           |   |      |  |      |                      |      | 7.84                  | 7.17 |                      |      |                 |      |                |
| Electricity | Off Peak                    | 3.9            |   |      |  |      |                      |      |                       |      |                      |      |                 | 4.33 |                |
|             | Unrestricted                | 6.4            |   |      |  |      |                      |      |                       |      |                      |      | 6.4             |      |                |

- NB**
1. Use manufacturers recommended fuel for each appliance
  2. Efficiencies quoted are seasonal efficiencies where  
Seasonal Efficiency = Conversion Efficiency x Utilisation Efficiency.
  3. Delivered energy costs quoted above are for conditions stated on IIRS Comparison of Energy Costs sheet.

FOR FURTHER INFORMATION CONTACT:

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Principal Scientific Officer,  
Energy Services,  
IIRS, Ballymun Road, Dublin 9.  
Tel: 370101

1st APRIL 1982



The death has taken place of Desmond McKee, Chairman and Managing Director of F. B. McKee & Co. one of the largest building and civil engineering companys in Ulster.

Des was a member of the 48 and 49 Irish Triple Crown rugby teams and a British Lion. He, in addition to his business interests, was a Director of the Northern Bank and a member of the Belfast Harbour Commissioners. He took an active part in the various committees etc. connected with the construction industry and was an active worker on many charitable organisations.

W. H. Martin Plastics Ltd., 24 Roughforte Road, Newtownabbey, have become distributors of the Hunter Genova CPVC range of pipes and fittings. The fittings have been under test by the National Water Council for the last 18 months and are now listed in the N.W.C. Directory. These are the first complete plastic systems to receive N.W.C. and as a result the system is now available

for all domestic plumbing applications.

Building Design Partnerships have announced the appointment of Ernest Murphy as Associate Mechanical Engineer in their Belfast office. Mr. Murphy has been with the Partnerships since 1969 and has been closely involved in many of the major projects developed in that office.

W & E Bullick & Co. Ltd., 195 York Road, Belfast, hosted a part of consultants and engineers from the D.O.E. at a reception in the Dimadry Inn. The occasion was to introduce

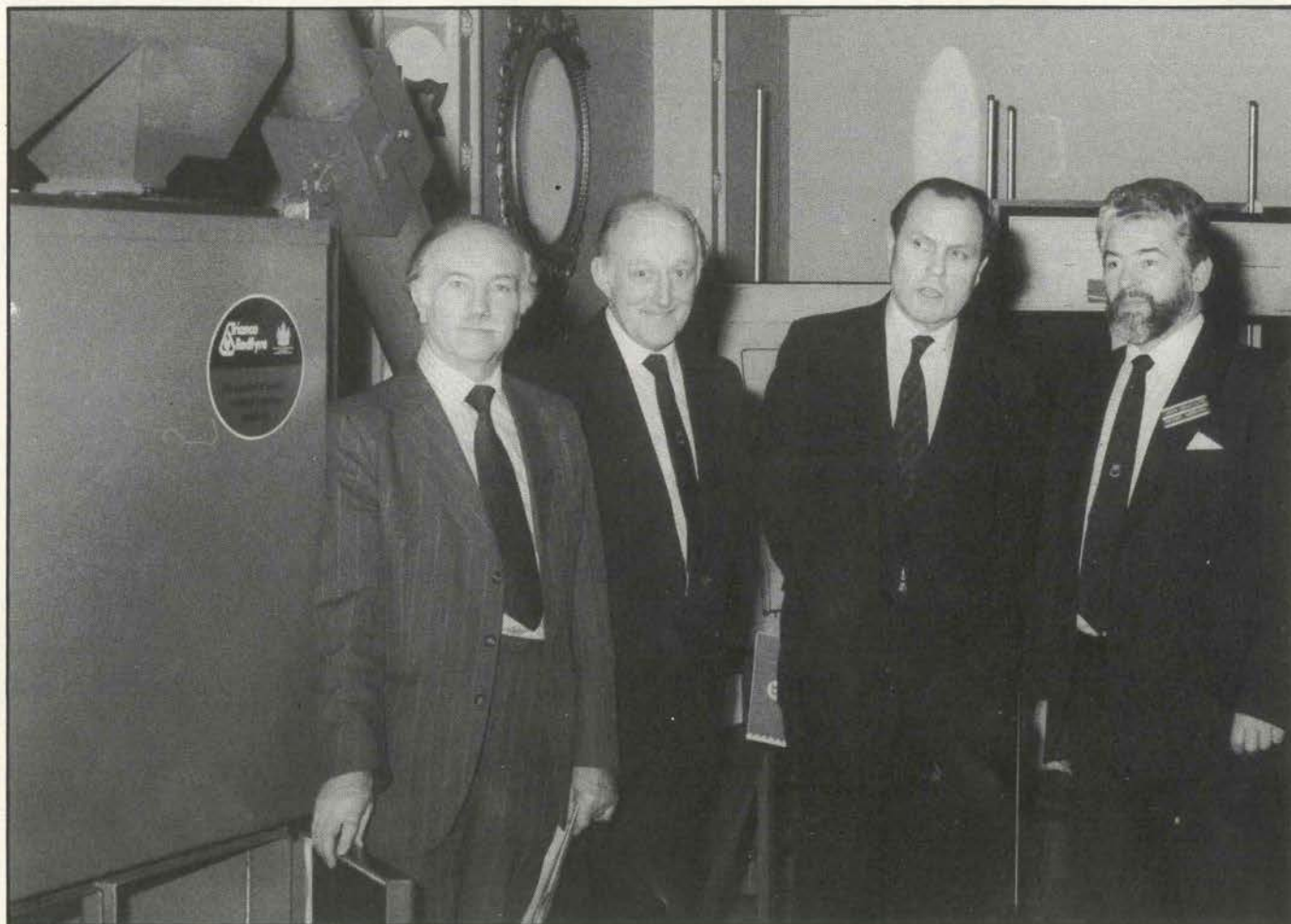
the range of Golden Anderson automatic valves from America shortly to be manufactured in U.K.

Coupled with this introduction, visitors were able to reacquaint themselves with the Blakeborough range of Hi Ven and valves.

Guests included Warren Higgins, Vice President of Golden Anderson U.S.A., F. Pierce of G.A. C. Blakeborough, Technical Director of Blakeborough Valves along with their Chief Engineer, R. Grondage.

The Environmental Supply Co. Ltd., 35 Connswater Industrial Estate, Belfast, have on behalf of Roof Units Marketing Ltd. introduced the Maico Pioneer input/extract recovery unit. With this unit the incoming fresh air passes through a seperate channel and through a "heat wheel" thus absorbing the heat deposited by the extracted air.

Full details of the Collins Walker electrode boiler can be obtained from McCaig Collins Ltd., 6 Greenwood



● At the John Kelly Ltd. Seminar were (l to r): F. Medlicott, Technical Manager, Trianco Ltd.; F. R. McBride, M.B.E., Director of John Kelly Ltd.; D. G. Barret, Manager, Coal Advisory Service; and P. Weston, Agency Manager, John Kelly Ltd.



# KUTERLEX PLUS



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Because Kuterlex Plus, "Yorkshire" copper tube sheathed in a profiled and durable polythene sleeve, is designed to give maximum protection in all plumbing and heating situations.

Benefits are tremendous:

- Protection from corrosive elements found in screed, plaster and soil.
- Neat pipe runs, important where tubes are on the surface.
- Cushioning against transverse expansion.
- No need to paint and easily cleaned.
- Protection from abrasion.
- Reduced condensation.
- Saves time and expense.
- Reduced noise level.
- Reduced heat-loss.

For further information, please contact **Bill Allen** at:

**Copper Tube Division,  
IMI Yorkshire Imperial Limited,  
Lislea Drive (Lisburn Road),  
Belfast, BT9 7JG.**

**Tel: 0232 - 6676311.**

**IMI**  
A subsidiary of IMI plc.



## ULSTER NEWS

Avenue, Belfast.

This type of boiler is ideal for those requiring instant or intermittent steam supply. Completely automatic with efficiencies in excess of 90%. The boiler will operate with a wide degree of modulation.

Brian Thompson Ltd., 16 Brunswick Road, Bangor, is handling the Mac-therm range of cast aluminium radiators.

The radiators are available with a stove enamel finish.

Powermatic-Sime have introduced a new range of cast iron boilers. A high efficiency is claimed for these oil or gas fired boilers due to the special gas passage. The product will be handled in Northern Ireland by the local Powermatic agent Jim Lowry, The Cottages, Craigtanlet, Holywood, Co. Down.

Northern Exhibitors at the Offshore Oil Exhibition at Shannon will include Harland & Wolff Ltd., Burgear International, G.C.A. Air-changers and Palmer Engineering.

Manufactured by Craigavon Engineering Ltd., Craigavon Boiler Services have introduced a new heat recovery unit for application to the five and seven inch flues of domestic boilers. With the heater the circulating hot water passes through the device thus collecting extra heat on its passage through the system.

About 150 engineers and consultants from all sections of industry and commerce were the guests of the Agency Dept. of John Kelly Ltd., 23 Station Street, Belfast, for the introduction of the Trianco Industrial range of boilers. The Agency Dept. took the opportunity to present a complete package of products handled by the Dept.

The package comprised Selkirk Chimney, Aerocowl, the Trianco Boiler and Benceede cool handling equipment.

The benefits of the Trianco boiler were explained by Mr. F. Medlecott, Technical Manager of Trianco, while Mr. P. Weston, Manager of the Agency Dept. introduced the other products prior to the buffet lunch. Mr. F. R. McBride, Director of the John Kelly Group, thanked the guests for their attendance at the same time drawing attention to the advantages of solid fuel as a heat source.



● A. Garrick, Gulf Radiators Ltd; N. Hawkes, Aerocowl Ltd.; T. Bradshaw, John Kelly Ltd.; and S. Neill, at the John Kelly Seminar.

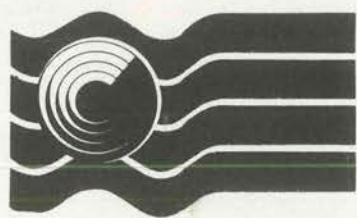


● Architects at the Kelly Presentation were (l to r): C. Spencer; V. Robinson and W. Galbraith.



● Mr. W. Pascoe outgoing President of the Northern Ireland Master Plumbers Association presents the chain of office to his successor, Mr. Harvey Bicker at the Association's Annual General Meeting at the Drumkeen Hotel Belfast.





# EXPOCLIMA Hevac 82

National Exhibition Centre, Birmingham 24-28 May 1982

This is a special year for Hevac as it is being twinned with the 3rd Expoclima which is the European Exhibition of Refrigeration and Air Movement. Irish visitors will have a chance to meet Continental exhibitors almost on their own door step and hopefully as the exhibition is being held in Birmingham there will be no problems with language as often happens at Continental shows. So this year Hevac will be a very important show not to be missed especially if you have interests in Continental products. We preview on the following pages some of the new innovations and ranges which will be on show.

## Fibreglass

The main feature on the Fibreglass Limited Stand (2M20, Hall 2) at Hevac '82 will be their new Crown Pipe Insulation.

Factory-engineered to the highest

standards at the new Fibreglass £30 million plant, at St. Helens, Merseyside, Crown Pipe Insulation is a new improved form of insulation for pipes of 15 mm to 610 mm o.d., at operating temperatures in the range 2°C to 540°C.

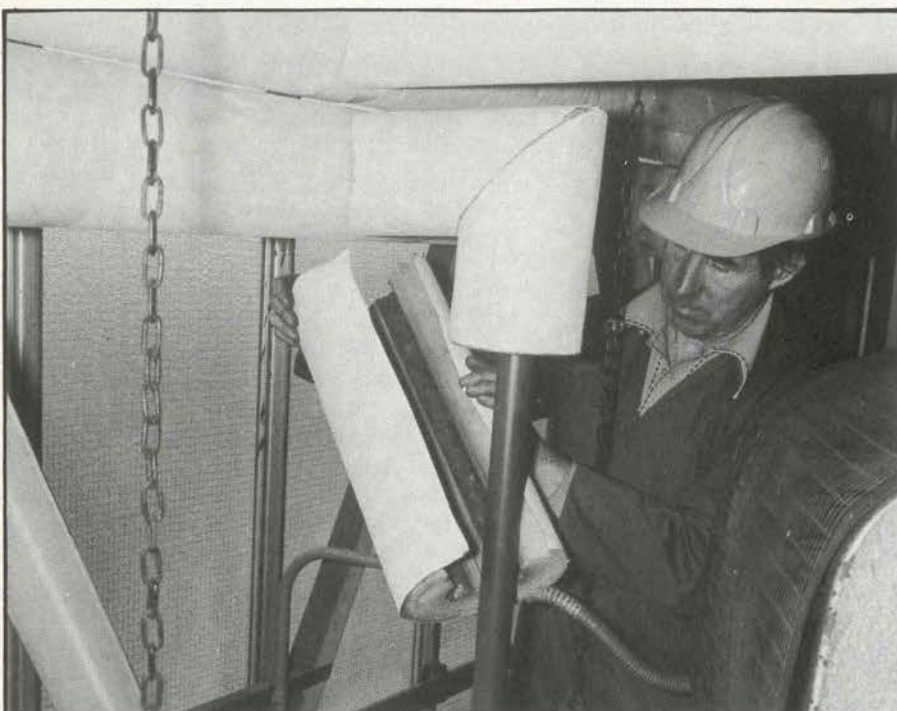
The specially developed Z-lock heat saving seal, unique to Crown

Pipe Insulation, is available on wall thicknesses from 50 mm to 100 mm, and ensures all round insulation even if pipes are oversize.

Fibreglass tests, using thermographic photography, show that the Z-lock system closes the gap, cuts down butt-joint wastage thereby contributing to an improved overall performance along the pipe.

Crown Pipe Insulation is available nationally in a range of hundreds of sizes and in a choice of either Class 'O' or Canvas finishes as well as Plain.

Also featured on the stand will be other well proven products in the Fibreglass H & V range, including Flexible and Rigid Duct Insulation.



● A lagger snaps Class 'O' covered Crown Pipe Insulation on to a pipe, where its interlocking Z-lock joint ensures a tight heat-saving longitudinal seal.

## Roof Units

A six-inch electrically-operated domestic window fan is the latest addition to the highly-successful "Maico" product range marketed by the Midlands-based Roof Units Group.

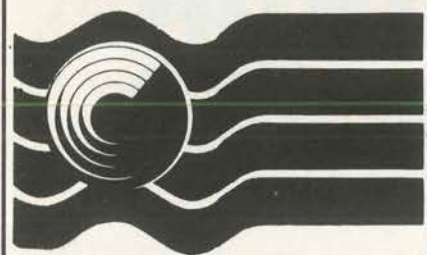
It is one of a series of window fans in five different sizes and 12 variations which will be featured on the company's stand (3R 42) at Hevac.

The new six-inch automatic shutter fan — like others in the range it can

H&V News, May 1982 21



# EXPOCLIMA Hevac 82



## Exhibition preview

also be wall-mounted — is designed for use in kitchens, bathrooms and toilets, and has an air extraction rate of 10,000 cu. ft. per hour.

Main design feature is a tempered bi-metal strip connected to the main shutter system and this gives an action which has eliminated the noise level associated with traditional fans.

"We are not directly in the retail business but we decided to add the product to our range after a strong feedback from distributors", explains managing director Mr. Ray Stokes.

"It is selling at a price which is 35% below other electric shutter models and which also compares very favourably with cord action units currently on the market".

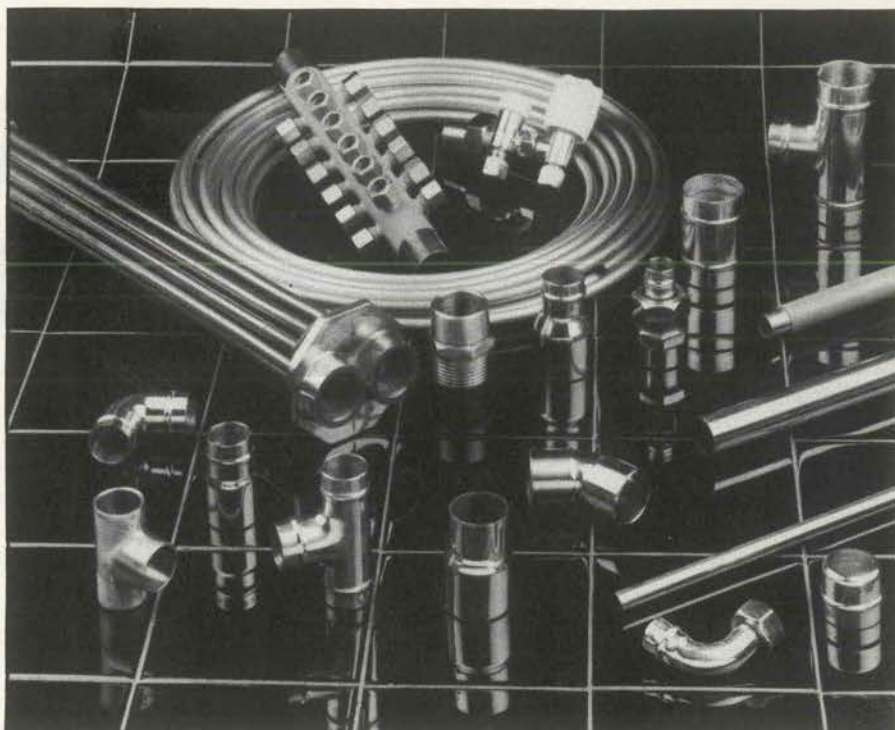
Other models in the "Maico" (say My co) window fan range are aimed at Roof Units' traditional customers in the top quality specification market.

They include cord-operated, reversible and extract-only units, and all motors are fitted with thermic overload protection cut-outs.

Hevac will be the first public platform in the UK for the Maico range of ventilation fans — launched last September and now offered ex-stock by Roof Units' nationwide distributor network.

Apart from Maico, other products from the Dudley company's more established range will be making their debut at the show including a newly-developed toilet extract twin-fan, an in-line duct fan of improved design and a fume extraction model which meets the latest legal requirements.

There are also new speed control units for large fans and heavy duty motors which, says the company, "represent a breakthrough on price and technical performance."



● Part of the range of Wednesbury Tube's copper products.

## Wednesbury

"Monsters run amoke", runs Wednesbury Tube's copy line for their Hevac promotional advertisements.

The stand is a manifestation of this bold claim — a huge tee, 12'6" high x 18'4" wide and a coupling in proportion.

Wednesbury's role as a major British copper tube and fittings manufacturer is reflected in the mind-boggling scale of their stand. "Confidence and Quality" are their watchwords, and they have a range of products to match.

Kitemarked Copper Tube and Solder Ring Fittings, the Microbore central heating system, Wednesbury Micraversion elements, and the full range of N.W.C. listed end feed fittings are all included in the Wednesbury family of literature. If you have an interest in any of these, whether it be sales or technical, the Wednesbury staff will do their utmost to be of assistance.

If you have no professional interest . . . well, the stand itself is worth visiting just to look at! . . . but don't ask for copper tube to match the fitting!

## Computair

Computair Ltd. is a small firm introducing up to the minute technology to the HVAC industry.

As the name suggests they are working with computers, not the large main frames that require a specialist language and a controlled environment, but the new smaller microcomputers that are now being used in a wide range of applications throughout industry as a whole. The microcomputer is here to stay and is already an established part of progressive companies. It fits on a desk top and its basic language, similar to everyday English, can rapidly be learnt by most personnel.

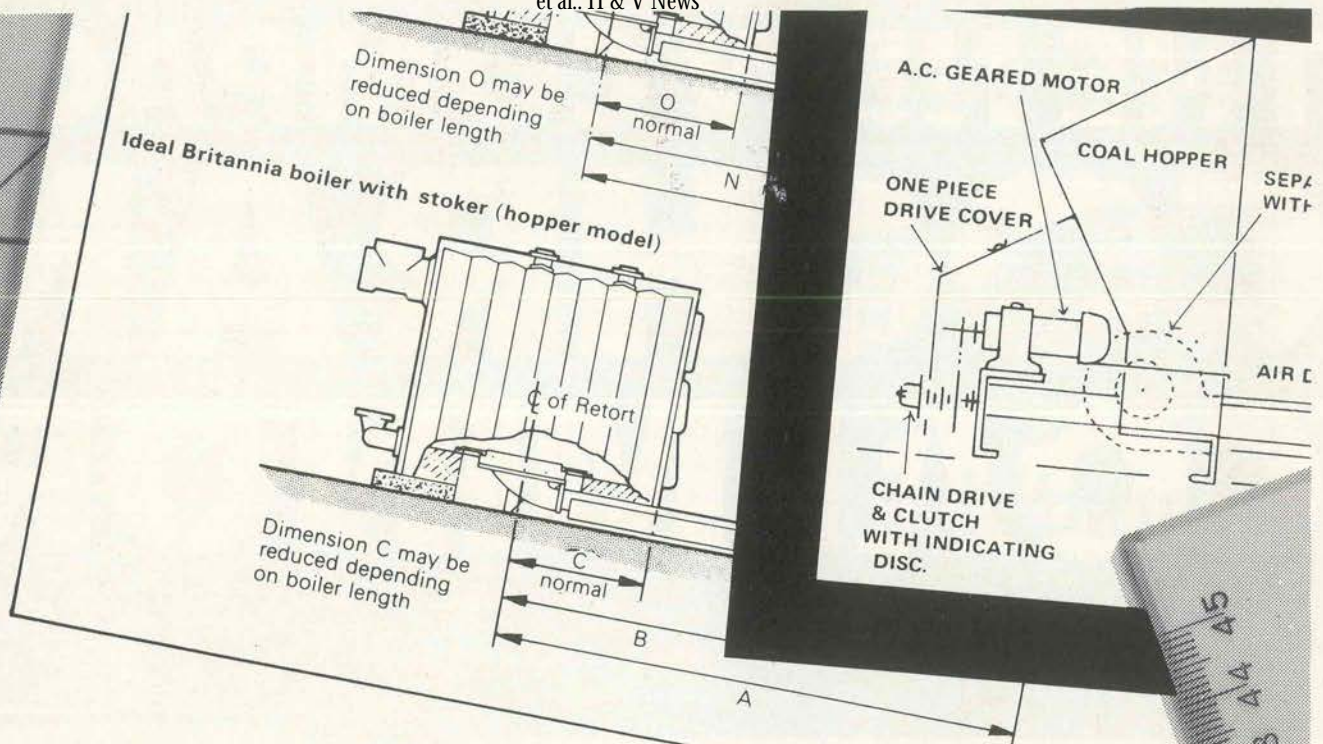
Computair offer a package consisting of hardware (a Commodore Pet Business Machine) and software. The software is individually tailored to meet the client's needs, enabling computerised design and quotation. Quotations need no longer involve the engineer in hours of calculation, but can be prepared and typed ready for despatch within minutes. Unskilled staff can feed the operating parameters into the computer thus freeing the engineer for more specialised work.

With their technical knowledge of the HVAC Industry, Computair will be demonstrating programmes covering the following areas on Stand 3T26:

Fan Selection; Psychometric Viability; Heating & Cooling Coil Design; Air Handling Units; Heating & Cooling Head Calculations; and Standard Product Selection.

Computair, as well as being innovative, are flexible and if none of the above programmes meet your exact





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mechanical stokers.*

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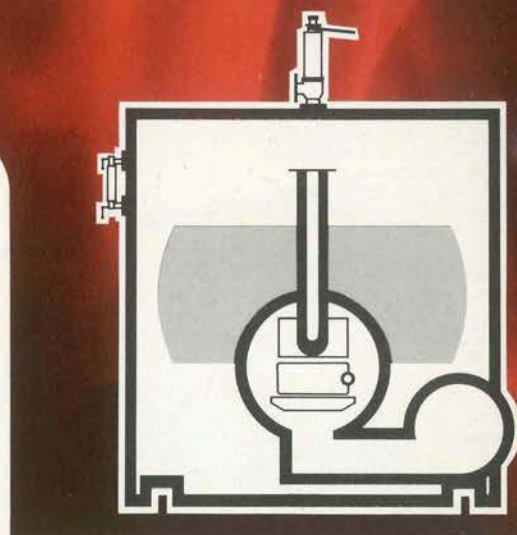
# THE NEW COMPACT COCHRAN COALMINOR

## ALL THE BOILER OUTPUT YOU NEED UP TO 10,000 lb/hr

Right from the start the new Cochran Coalminor has been designed for more efficient, more economical operation. In other words, a boiler for today that gives you the steam or hot water you need—without paying heavily for excess amounts you don't need.

And with literally thousands of successful coal-fired installations behind us (and the finest after-sales service in the industry) our new Cochran Coalminor won't only save you money. It'll save you time and trouble, too.

Find out more. Contact NEI Cochran now for further details.



Look what the Coalminor offers you. Compare it with any other unit in its class.

- Extremely compact, completely self-contained design.
- Proven, practical Fixed Grate Stoker—highly reliable.
- Steam capacity of 2,000–10,000 lb/hr or equivalent hot water duty.
- Coal-fired (of course)—today's cheapest boiler fuel by far.
- Fixed Grate is suitable for burning economical washed singles—and is complete with a pneumatic coal feeder.
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## COCHRAN BOILERS

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Newbie Works, Annan,

Dunfermline, Fife, Scotland.  
<https://www.tandfonline.com/doi/10.1080/00071728208839001>  
Tel: 01843 861211. Telex: 778183



requirements, their engineers are always ready to consider new programmes in the heat transfer of air movement field.

Visit Stand 3T26 and see for yourself.

## Kiloheat

A totally new system of recovering the warm air normally discharged to waste into the atmosphere by roof extract fans will be shown by Kiloheat Ltd. on Stand 3S16.

Designed to give the highest practical economy at a relatively low initial cost, DV/W heat recovery units are complete packaged units designed for use or decentralised ventilation systems.

The system is based on air to air cross-flow heat exchangers which turn the reclaimed heat to the building via a fresh air supply completely separated from the waste air stream.

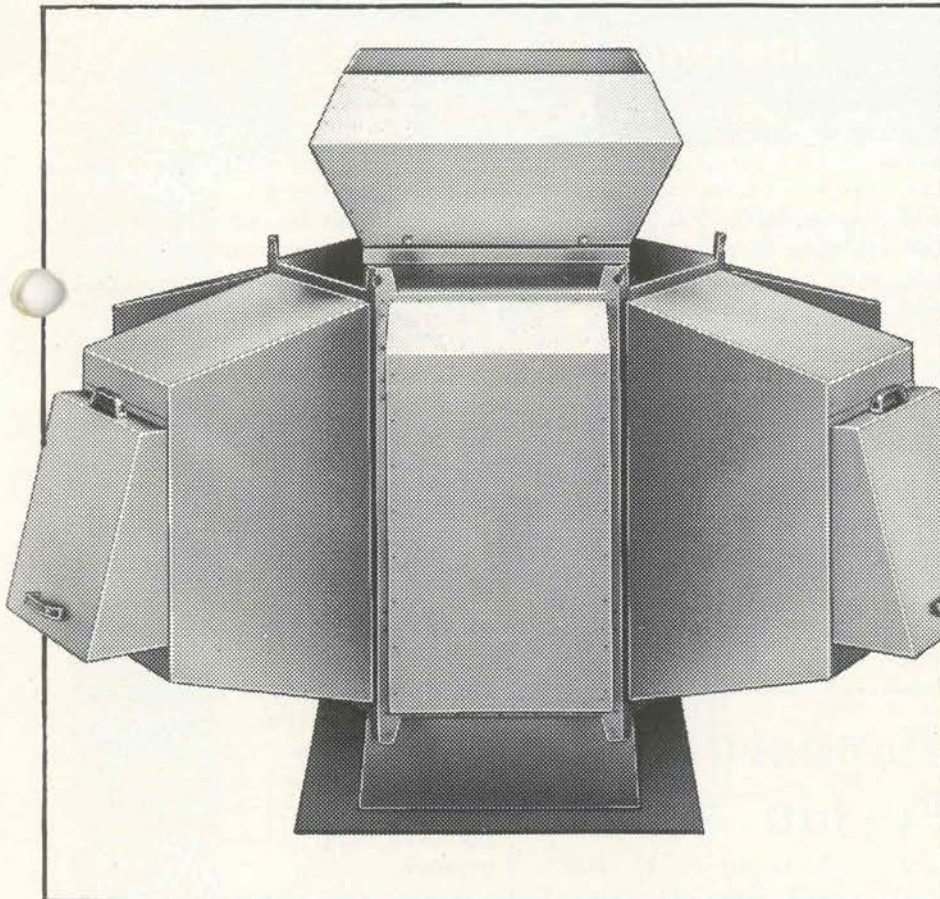
Various options can be used for the supply air fan enabling the recovery unit to give either local or remote warmed fresh air according to the location and individual requirements. There are no pumps, pipes, liquids, or moving parts so maintenance is

both easy and minimal. Now in quantity production there are ten models available with volume up to 18,300 m<sup>3</sup>/h.

Models from Kiloheat's extensive direct drive centrifugal fan range, maximum impeller size 450 mm, duty up to 6.5 m<sup>3</sup>/s will be on display with examples of their belt driven models, maximum impeller size 1600 mm, duty up to 100 m<sup>3</sup>/s.

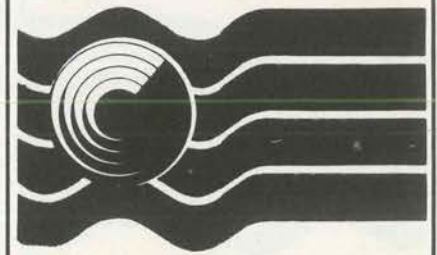
A working model from the Silento-vent direct driven centrifugal, single and double inlet fan range, diameters from 160 to 355 mm, volume to 35,000 m<sup>3</sup>/h will demonstrate the fans characteristics, such as steep pressure volume curve, speed control of 0 to 100% variation without thermal overload of the motor, and the low and extremely flat sound power development giving no increase in noise levels at free air conditions.

Roof extract units for horizontal and vertical air discharge, with backward curved centrifugal impellers on external rotor motors, maximum impeller size 710 mm, duty up to 9.0 m<sup>3</sup>/s, available with speed regulators, flameproof motors, and soaker sheets for any roof profile will also be shown. A high temperature vertical discharge unit for fire ventilation and smoke extract systems will be included in this display.



● Kiloheat roof mounted heat recovery units reclaim the warm air normally discharged to waste by roof extract fans.

## EXPOCLIMA Hevac 82



## Exhibition preview

Details of two entirely new product ranges to be launched at Expoclima Hevac are being withheld until the exhibition opens.

## Thorn EMI

Thorn EMI Heating Limited, one of the largest manufacturers of domestic central heating in the UK, will be exhibiting their full range of products on Stand No. 1B32 at this year's Hevac.

One of the stars of the show, as far as the domestic user is concerned, is the recently launched lightweight 'mini' Apollo gas fired wall mounted boiler. The Apollo is particularly suitable for low energy housing, with a unique feature — it range rates down to 15,000 Btu/h (4.4 kW) without any significant loss in efficiency.

The Apollo was designed specifically for the modern day kitchen. It is ultra efficient yet unobtrusively blends with standard kitchen units. It is available in either room-sealed (balanced flue) or conventional flue versions. A quick warm-up process, combined with a low rate pilot makes for fuel and money savings without losing the comfort of a warm house and constant hot water.

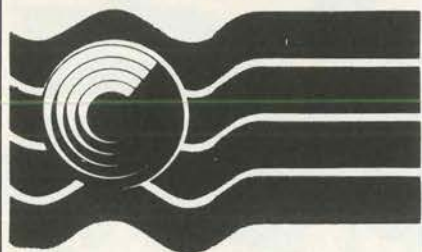
The Apollo is available in two sizes — to cover domestic installations requiring heat outputs of up to 14.7kW (50,000 Btu/h). Its low thermal capacity has an efficiency at full rate of 80% for the balanced flue versions and approximately 78% for the conventional flue model.

New to this year's Hevac Show are a range of brand new solid fuel boilers the Janitor A45 and A65. With outputs of 13.2 kW (45,000 Btu/h)

H&V News, May 1982



# EXPOCLIMA Hevac 82



## Exhibition preview

and 19.1 kW (65,000 Btu/h) the Janitors are designed to burn anthracite grains beans and 'sunbrite' singles, all recommended in accordance with the clean air act and suitable for use in smokeless zones.

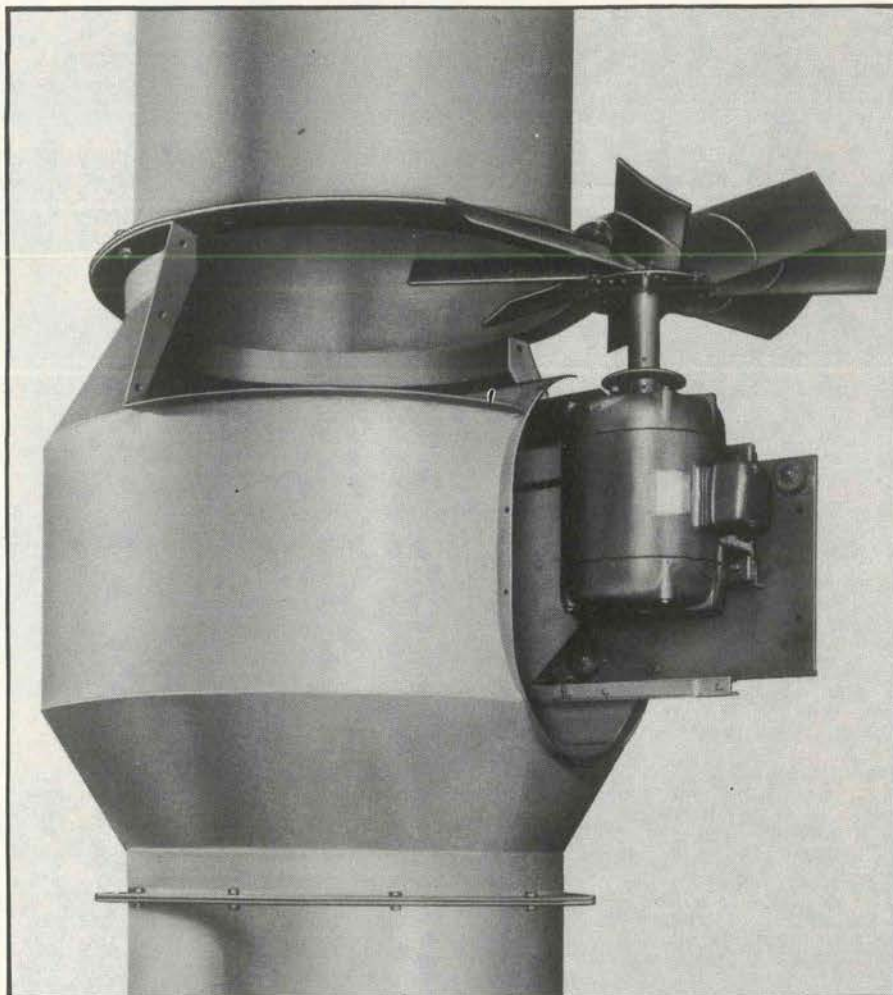
The boilers are of the gravity-feed type ensuring a constant fire-bed depth. Rate of combustion is controlled by a thermostatically operated combustion air fan. A unique air governor eliminates the need for additional flue stabilisers. Ensuring that when the boiler is slumbering in adverse conditions the fire will not 'run away' due to excessive draughts.

At this year's Hevac for the first time Thorn EMI Heating are showing the new range of convector radiators, singles and doubles, to supplement their existing very popular steel panel roll top range. Combining high output efficiency with a slim appearance. Radiators are manufactured in 15", 21" and 27" heights and in lengths from 21" to 117".

Thorn EMI Heating's efficient new Housewarmer II gas fired back boilers combine elegant good looks, while providing full central heating and domestic hot water. The Housewarmer II 30/45 back boiler is range rated from 8.8 kW to 13.2 kW (30,000 Btu/h to 45,000 Btu/h). The boiler will fit into a standard fireplace with or without fitted surround.

There are four models available, the E, S, Super and De-Luxe. All Housewarmer II boilers are fitted with a compact gas valve, and low consumption pilot and a built-in boiler thermostat.

Perhaps one of the most unobtrusive and versatile boilers on the market today is the Thorn EMI Heating range of free standing gas boilers. They are range rated with outputs from 8.79 Kw (42,000 Btu/h)



● Standard and Pochin's new bifurcated duct mounted fans can be specified with the facility to remove a section of the fan casing and slide out the motor and impeller for maintenance.

to 43.93 kW (150,000 Btu/h) blending perfectly with existing work surfaces in the kitchen. The 'M' is equally at home in a cupboard or utility room installation in either cased or uncased versions. The M30/42B and M44/54 are available for under work surface application to fit under existing worktops.

The Olympic range of wall-hung gas boilers will also be displayed. Available in two sizes the 20-35 C/F and B/F rated at 10.6 kW (35,000 Btu/h) and the 38.50 C/F and B/F rated at 14.65 kW (50,000 Btu/h).

The Panda oil fired boilers have three outputs in the range from 55,000 Btu/h to 120,000 Btu/h, available in cased, uncased and through-the-wall (low level discharge) versions.

## Standard & Pochin

Standard and Pochin will be exhibiting its recently launched range of mixed flow and axial flow bifurcated fans for the first time at this year's Expoclima/Hevac, Stand No. 3T56.

Also new for 1982 is the Multifan range of modular component fan impellers.

Standard and Pochin's new bifurcated fans are based on a well proven design concept developed specifically to handle hot gases and fumes which are corrosive, flammable or abrasive at temperatures as high as 550°C. Extremely ruggedly constructed, bifurcated fans are installed as an integral section of a duct system. This required no changes to direction of airflow or duct sizes. They can be installed in any position, vertically, horizontally or roof mounted.

Available in a wide range of capacities and sizes for ducts from 12 in to 48 in diameter, these fans will deliver air flow volumes ranging from 2100 cfm to 0.25 in s.w.g. to 45,000 cfm at 2.0 in s.w.g. This unit has axial flow impellers designed with non-overloading power characteristics. This results in practically constant power consumption over the entire operating range, regardless of static pressure.

A new range of modular component fan impellers, called Multifan, will be launched at the Expoclima/Hevac exhibition. This product range



is manufactured in association with Vostermans of Holland and will be marketed exclusively by Standard and Pochin within the UK.

The Multifan system is based on a series of polypropylene or glass fibre reinforced nylon blades which can be fitted into glass fibre reinforced nylon and cast aluminium hubs of various styles. A wide range of blade sizes, pitch and aerodynamic profiles can be specified to tailor make an impeller for a specific air movement duty. Major applications are in engine or compressor cooling and axial flow fans for ventilation and process applications.

Examples from Standard and Pochin's centrifugal fan range, packaged air handlers and an example of their comprehensive range of central station air handling units will also be on display.

## CHS Keeling

On March 1st 1982, CHS Keeling Limited moved into its extensive new premises at 19 Aston Road North, Aston, Birmingham B6 4DS.

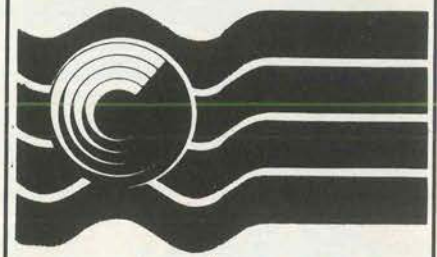
Sales of CHS Keeling hot water towel rails and copper radiators have increased significantly over the last two years and re-location to a larger, modern factory became necessary both to maintain an acceptable service to the company's customers and to facilitate further expansion.

Keith Battersby, CHS Keeling's Managing Director explained that merchants in Great Britain and Ireland have been quick to recognise the superior quality of the company's products and were impressed with short delivery that the company effected. "We have spent two years improving our quality and we are now justifiably proud of our product".

1982 sees CHS Keeling Limited exhibiting at Expoclima Hevac on Stand No. 1G06 for the first time in its 82 year history. CHS Keeling manufacture the widest range of hot water towel rails available, and will be displaying chromium plated, gold plated, and polished brass towel rails; towel rails with copper radiators for direct systems; towel rails manufactured from zinc free materials, a range of copper radiators and a new range of high output double panel radiator towel rails.

All these products will be illustrated

## EXPOCLIMA Hevac 82



## Exhibition preview

ed in a new twelve page full colour brochure which will be introduced to coincide with the exhibition.

## Carlyle

Attention on the Carlyle stand, 3V26, will be focussed on their new mobile training centre for residential heat pumps.

Carlyle Air Conditioning is the UK



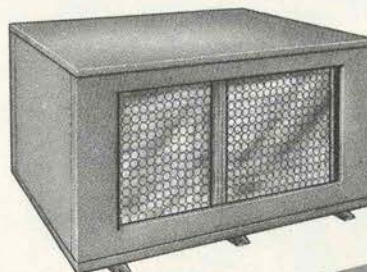
**Hall-Thermotank  
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**Refrigeration and  
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## DELTACLIMA Packaged Air Conditioning Equipment



Type C.C.U. curved  
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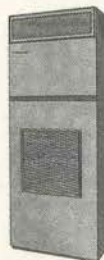


Horizontal air handling units.  
Chilled water and DX.



Type RA roof  
mounted air  
cooled units

Vertical air handling units.  
Chilled water and DX.  
Air cooled and water cooled.



Downflow air  
conditioning units.  
Chilled water  
and DX.

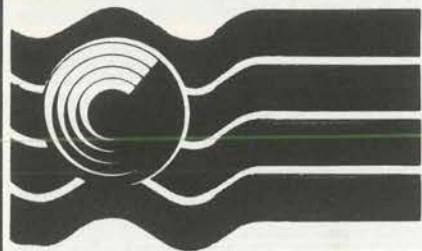
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# EXPOCLIMA Hevac 82



## Exhibition preview

marketing subsidiary of the Carrier Corporation, Syracuse, New York, which is investing substantially to develop the residential heat pump market in Europe over the next few years. The vehicle has been developed to take the training to the technicians rather than following the more usual policy of bringing the technicians to the training.

When the first vehicle left for France in January, Zone Vice President, Joe Maliga announced that another was being built for Germany and that there would be another, based here in the UK for the home market in the next year or so!

The local response was so enthusiastic that plans were advanced so that the third training centre could make its debut at HEVAC.

The vehicle is custom built to promote to Carlyle's authorised Dealers, the sales of residential heat pumps by demonstration and familiarisation of products and systems. Each vehicle has a 40ft trailer, the maximum permitted under EEC regulations, and incorporates its own power supply enabling it to be set up at any desired location. Each is equipped with a representative selection of Carlyle heat pumps ranging from small through the wall types, to models for large residential applications, as well as training aids like the illuminated heat pumps cycle and refrigeration cycle trainers. There are working examples of an air to water system and of an air to air system using the well proven Carlyle 30RQ model heat pumps.

Also on the stand will be a Carlyle Heat Machine (30HM), an energy saving heat reclaim machine capable of extracting waste heat from any source of warm water for use in heating commercial and industrial buildings. Available in 17 sizes with



● The Carrier mobile training centre, built for the French market. The Carlyle vehicle on show, has been designed along the same lines.

heating capacities ranging from 50 Kw to 1050 Kw, the heat machine is capable of delivering up to 6 Kw of heat output for every 1 Kw of electric input.

Completing the display will be a representative selection of the wide range of Carlyle heat pumps, room air conditioners, including the new Hi-Tech, and the 51CS split system RAC and well tested 5F and 5H compressors.

Carlyle believe that the development of the forthcoming residential heat pump market presents a great opportunity for their established dealers and this is where they are firmly placing the emphasis this Hevac.

The stand will be manned throughout the week by representatives from Carlyle's three authorised distributors, Ductwork Engineering Systems Ltd., Walker Air Conditioning Ltd., and Weathermaker Equipment Ltd.

## Danfoss

Danfoss will be showing several new product ranges at their stand (No. 2K48) at the Hevac '82 exhibition. The theme of the stand for 1982 is Danfoss — best news in town!

The new products launched will include the EKA45 air conditioning control, the AVDO minimum volume controller, the low temperature version of the popular RAV, and the 'Compensaver' — a control concept combining a weather compensator with internal temperature control.

Other products displayed on the

stand will include the recently introduced EMAJ electronic heat meter and the company's comprehensive range of burner controls and nozzles.

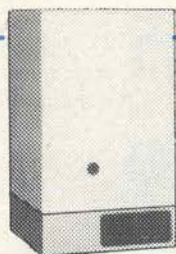
The latest addition to the extensive range of Danfoss radiator thermostats is a low temperature version of the popular N Series RAV. This new version is ideal for use in public buildings where maximum temperature limitation of the space temperature on a local basis is necessary to comply with current legislation.

The new RAV has a temperature range of 5 to 22°C which can be further reduced to 3 to 20°C by the addition of a small temperature range displacer cap. This maximum temperature limitation is achieved without resorting to limiting or locking, and the fact that the user can adjust the thermostat throughout its full range reduces the instances of product abuse.

The new RAV thermostat is primarily intended for use in single pipe systems and complements the low temperature version of the N Series RAVL for two pipe systems, offering the specifier a complete solution to accurate space temperature limitation.

The EKA 45 is a new addition to the Danfoss EPT 600 series air conditioning controls, and provides modulating control of direct expansion cooling coils in air conditioning systems. As well as providing greater economy by virtue of its ability to match evaporator output with system load, EKA 45 also simplifies plant selection and cost by removing the need for re-heating that has tradition-



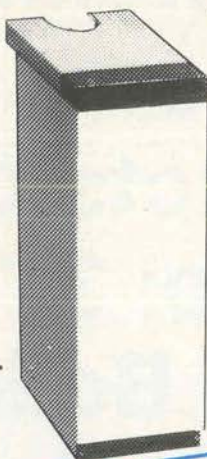


### Apollo

Lightweight wall hung gas boiler range-rated from as low as 15,000—50,000 Btu/h.

### Housewarmer II

Gas backboiler range-rated from 30,000—45,000 Btu/h. Plus a range of four Housewarmer gas fires.



### 'M' Range

Floorstanding gas boilers from 30,000—150,000 Btu/h.

### Olympic

Compact wall hung gas boilers from 20,000—50,000 Btu/h.

### Panda

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# Visitors from Ireland can see the **Andrews Range** of products on **Stand No: 3T10** and **Buderus Boilers** on the **Clyde-Combustion** **Stand No: IG64**

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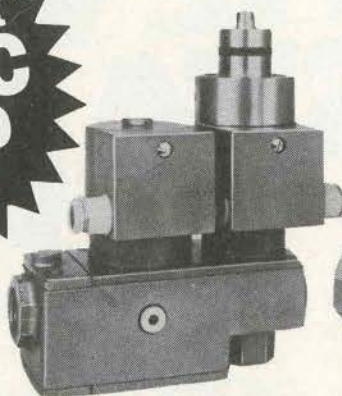
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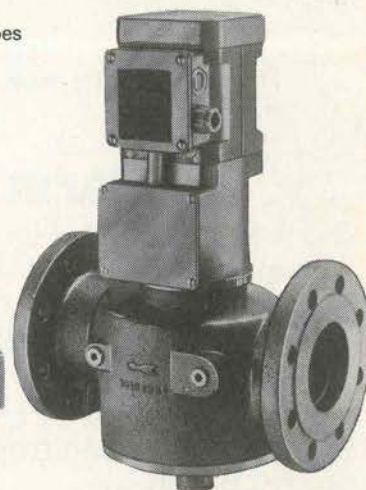
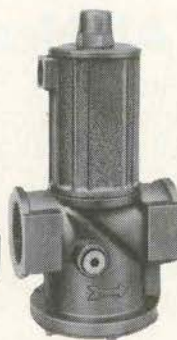
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ally been necessary where stepped control of direct expansion cooling has been used, particularly in systems that require close control.

In addition to the modulating function the EKA 45 also provides:

- Stop/start control of compressor.
- High pressure cut out.
- Low pressure cut out.

The new AVDO controller provides a simple, compact, non-electric solution to the problem of maintaining a minimum volume through the boiler or pump in a heating system. Previously, complex controllers have been necessary to overcome this problem.

AVDO is easily fitted into a by-pass around boiler or pump and simply opens to maintain the required minimum volume as the system shuts down. The inclusion of the AVDO also automatically solves the problem of the derating of boilers due to the presence of a fixed by-pass.

Introduction of the Danfoss AVDO enables specifiers and installers to apply other controls to the heating and/or hot water circuits with the knowledge that the minimum volume and boiler deration problems have been automatically solved. The AVDO is available with  $\frac{3}{4}$ " (22mm) connections and with a capacity range compatible with domestic or small commercial heating systems.

The Danfoss Compensaver is a new control concept, combining the popular and reliable ECT 600 weather compensator with internal temperature control sensors. The 'Compensaver' system is a low cost control system which is suitable for both new or existing heating systems. In existing systems it is easily fitted in place of an existing weather compensator.

The Danfoss 'Compensaver' overcomes this deficiency by using up to four internal sensors with its own adjustable set point. Ratio potentiometers vary the influence of room temperature on the compensator operation and can also be adjusted to allow for the varying characteristics of the rooms where sensors are located. The room sensors have been designed to facilitate easy setting throughout the building.

## Wilo

Wilo (U.K.) are appearing at Hevac in their own right for the first time.

Wilo manufacture one of the largest ranges of pumps currently available. Models include, canned motor pumps either single units or

twin pumps, in series, or parallel, end section, in line, norm and submersible pumps, with duties from 2 to 2000 G.P.M.

A separate section of the stand will be devoted to the new RS25 range of variable speed domestic circulators manufactured in Wilo's Irish factory in Limerick.

An entirely new range of commercial pumps will be launched at Hevac. The DOP/DOS series is a twin canned motor pump with both pumps in a common housing, offering considerable savings in both capital and installation costs.

All Wilo domestic and canned motor pumps carry a two year guarantee.

Throughout the exhibition Wilo will be running a "Win with Wilo" competition related to their products with daily prizes of quality German wines and Irish whiskey.

## Woods of Colchester

Six new product ranges, part of a totally new or re-engineered product portfolio planned by Woods of Colchester over the next three to four years, will make their debut at Expo-clima-Hevac 82.

To be known as the Colchester range, a rationalised family of ten extract units will be launched at the Birmingham show. These will be for vertical and side discharge and be powered by direct or indirect drives. Fans incorporated include axial,

# EXPOCLIMA Hevac 82



## Exhibition preview

centrifugal and mixed-flow.

Other new roof mounting units to be displayed include a twin-fan extractor and a mixed-flow input assembly.

Also making their Hevac debuts will be the Advanced Varofil variable-pitch-in-motion axial fan, a high temperature bifurcated fan for smoke-spill duties, a two-fan extension to the GP propeller fan range and the Woods ventilated ceiling.

The re-engineered Airpac 2b air handling units will be displayed in sectionalised form.

Estimating by computer on the stand will also demonstrate Woods fan selection technology.

Honoured with the Queen's Award for Export Achievement in 1966, named the Export Company of the Year in 1972 and winners of the Hevac Export Award for 1979,



● Some single and twin pumps from Wilo.



# EXPOCLIMA Hevac 82



## Exhibition preview

Woods of Colchester welcomes the decision to twin ExpoClima 3 with Hevac 82 and looks forward to greeting old and new friends on home ground.

With Woods companies in France, Norway, West Germany, Finland, Portugal and Italy, fan divisions in USA, Canada and Australia, and a network of overseas representation by Principal Distributors, the Colchester-based fan company is very much export orientated. Currently, 53% of its input is directly sold to some 100 different countries.

As in past years Woods companies overseas will be flying in parties of guests during the five days of the show.

## Vent-Axia

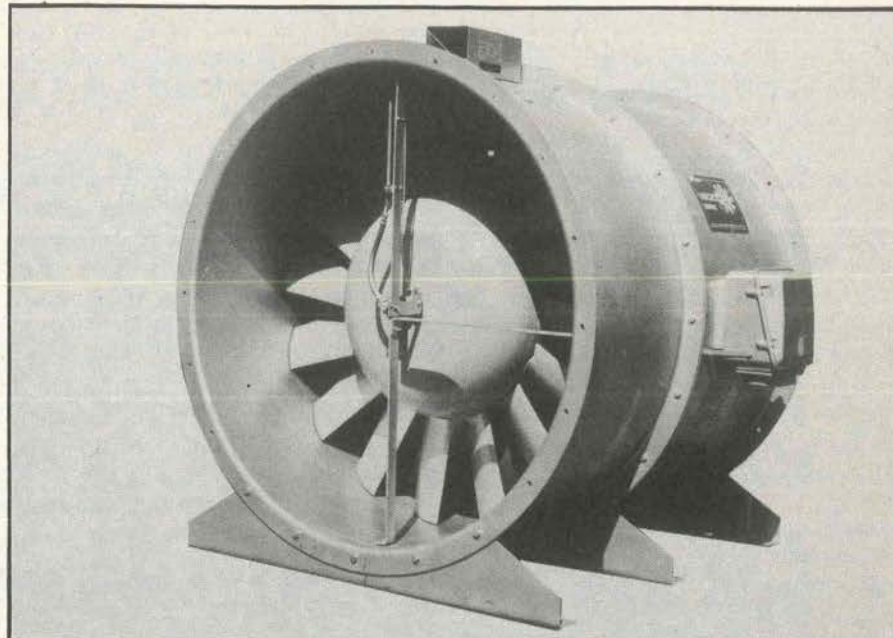
Proven ventilation versatility, reliability, and design-in-depth will be demonstrated again by Vent-Axia the market leaders at Hevac 82.

Vent-Axia products have proved themselves throughout the world for nearly 50 years with many thousands of installations in more than 100 countries of the world.

And, on stand 3U42 at Hevac 82, Vent-Axia will be showing its comprehensive product ranges designed to suit a variety of needs, ranging from domestic kitchens to complete ducted multi-unit systems for commercial and industrial situations.

These often-demanding situations include the very specialist applications such as darkrooms and laboratories and Vent-Axia has specialist models to suit them. That is the versatility of Vent-Axia.

The design-in-depth of Vent-Axia products means not only that installation is easy but also that mainten-



● Woods advanced varofoil variable pitch-in-motion fan, available in 14 sizes, 630mm-2,800mm dia.

ance and cleaning is exclusively simple, needing no specialist tools and only straightforward washing.

Vent-Axia ventilating units, which are designed for roof, wall, panel and duct installation as well as windows, are all available in four sizes: six, seven, nine and 12 inches. Range-master controllers increase the flexibility of operation by giving three speeds and by changing the airflow direction.

More depth-in-design comes from the Vent-Axia ventilation accessories for use with all Vent-Axia units. They are based on a range of inter-connecting modular components which combine to offer cost-effective flexibility in the design of extract and intake systems to suit individual applications.

## Nu-Aire

Nu-Aire will be exhibiting four absolutely new products on Stand 3R34 at ExpoClima — Hevac '82.

Three will incorporate Nu-Aire's just developed Quietscroll fan where the conventional metal scroll has been replaced by one manufactured in sound absorbing polyurethane open cell foam. This foam is encapsulated in a PVC film, impervious to moisture and most chemicals and the whole construction is fire resistant. The company claims that Quietscrolls absorb fan noise at its source, so producing quieter fans.

Quietscrolls are the basis of Nu-Aire's cabinet fans, cabinet twinfans and recessed units.

Five sizes of cabinet fan can handle up to  $0.57\text{m}^3/\text{s}$ . Like all Nu-Aire products, they are beautifully engineered units which are very easy to select, instal and service. Included as standard, are flexible duct connectors, plug-in fan assemblies and flying leads terminating in integrally moulded isolating plugs. Each size can also be provided with matched multiposition fixing brackets incorporating anti-vibration isolators, wall brackets, and silencers.

Six sizes of cabinet twinfan extracts up to  $0.82\text{m}^3/\text{s}$ . They are similar in construction to the cabinet unit but include two Quietscroll fan assemblies, one on stand-by. Twinfans are fitted with sensors in each scroll to detect an air flow failure and a linked shutter system which prevents air being blown back through the stand-by fan.

Recessed units are available in three sizes extracting up to  $0.24\text{m}^3/\text{s}$ . They are fixed above ceilings or in walls with only the grille visible. Special kits are available enabling the units to be easily fixed above suspended ceilings. Nu-Aire claim that the combination of Quietscrolls and low acoustic transmission grilles leads to quieter installations.

The fourth new product range are smokeclearers. Five sizes of these roof mounted units can continuously exhaust up to  $9\text{m}^3/\text{s}$  of smoke and fume-laden air at the temperatures in excess of  $1000^\circ\text{C}$ ! They are fitted with high velocity outlets sections which discharge the contaminated air clear of the buildings. The outlets are protected by guards which hinge clear



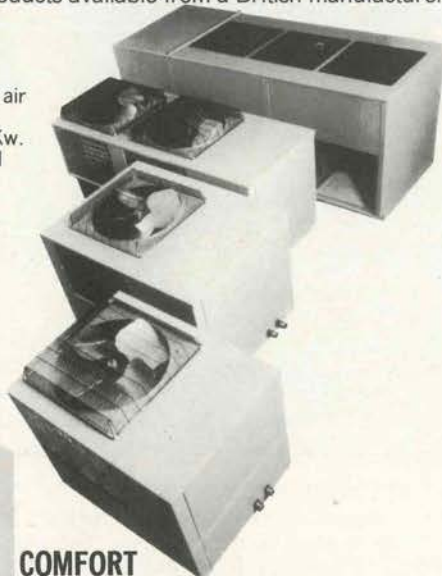
# 4 New Ranges from Airedale

To add to the equipment you've come to trust from Europe's leading Air Conditioning manufacturer.

Introducing 4 new ranges with over 34 new models designed to a variety of specifications to suit all requirements, to give Airedale the widest range of products available from a British manufacturer.

## AIR COOLED LIQUID CHILLERS

The new 9 model range of air cooled liquid chillers have capacities from 14—145 Kw. All units are fully packaged and designed for outdoor operation, with heat recovery options available.



Come and see us on Stand 3010 Hall 3 EXPOCLIMA HEVAC 82

## COMFORT RANGE AIR HANDLING UNITS

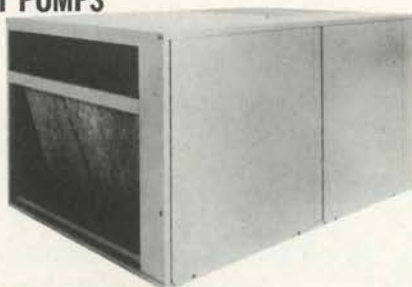
Based on a modular principle in five sections, with capacities from 10—50 Kw the Comfort Range of air handling units offer versatility and flexibility throughout the entire 8 models. Available in split system direct expansion or chilled water versions.

## SPLIT SYSTEM HEAT PUMPS

The new split system heat pumps are based on Airedale's modular range of air handling units, having 8 models available for vertical free standing or horizontal ceiling mounting. Designed to be compatible with the specially adapted condensing units. Cooling duties range from 10—50 Kw and a reverse cycle operation will provide between 5—36 Kw of heating.

## ROOF MOUNTED HEAT PUMPS

9 models are available in this new range of packaged roof mounted heat pumps. Cooling capacities between 7—45 Kw with reverse cycle heating capacities between 5—36 Kw. Units are completely weatherproofed and designed for outdoor installation. Supplementary heating fitted as standard.

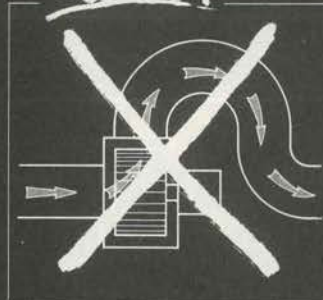


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Distributors for Eire:— Cool Air Ltd., 25 Cookstown Industrial Estate, Tallaght, Co. Dublin, Eire. Tel: (01) 511244. Telex: 31869 Coolei

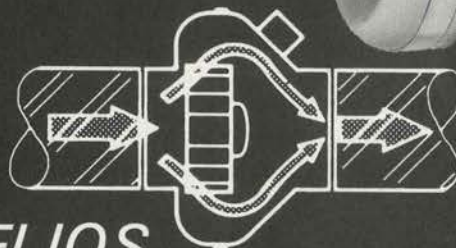
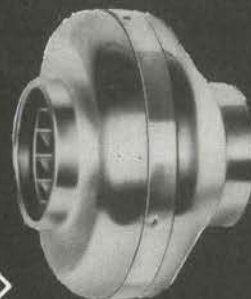
Keep the straight through air flow!

Obsolete!



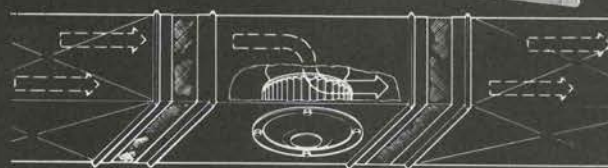
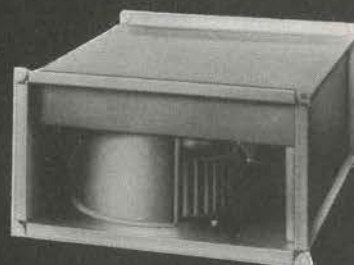
## HELIOS Radial Duct Fan RRV

Turbo fan with high pressure characteristics, in 7 sizes to suit nominal duct diameters. Performance from 160-1330 m<sup>3</sup>/h, and suitable for moving small and medium air volumes in domestic, commercial, and industrial applications.



## HELIOS Radial Duct Fan Radax

To be integrated into a duct system as a module of the duct work, installed simply and quickly. Suitable for standard duct dimensions. High pressure, low noise. Complete range available with 20 models, ranging from 1000-10,000 m<sup>3</sup>/h in air volume.



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# EXPOCLIMA Hevac 82



## Exhibition preview

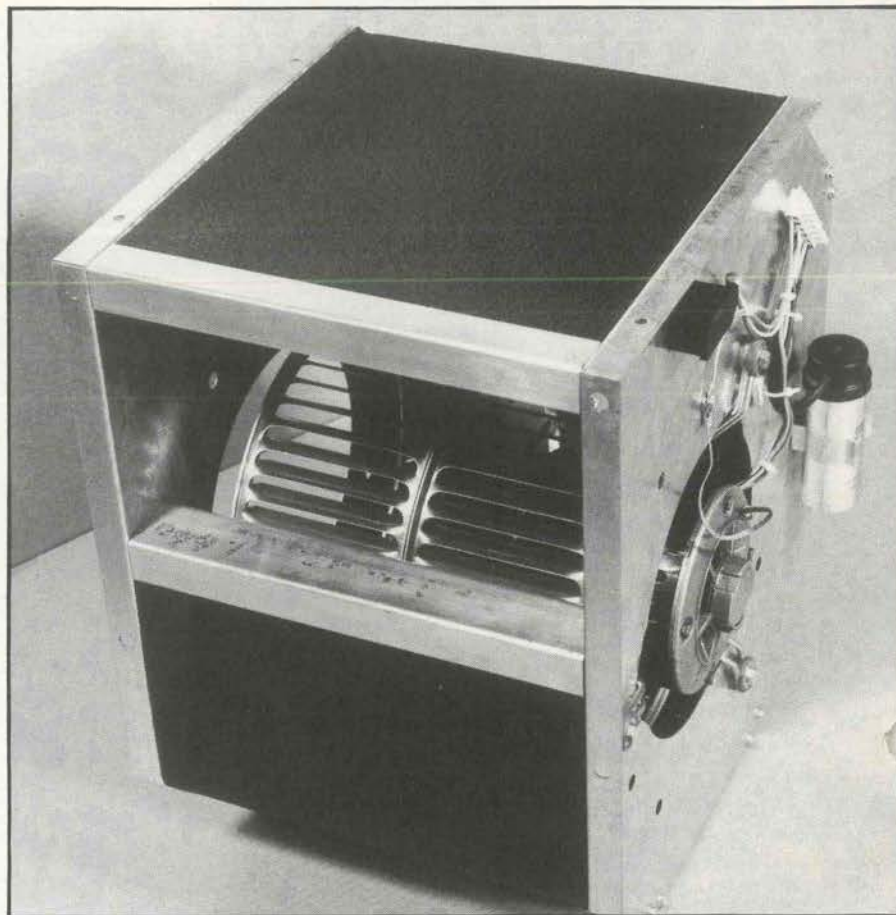
if debris blocks the grilles.

Smokeclearers help occupants to escape from burning buildings and allow the firemen to locate and effectively fight the fire. Firtio, Fire Insurers' Research and Test Organisation, have witnessed the testing of smokeclearers and have confirmed the units' ability to operate at temperatures significantly higher than previously has been thought possible.

## Trianco

Trianco's newly-formed industrial boiler division will be making its trade debut at Expoclima/Hevac exhibition with samples of its extensive range for solid fuel, blown gas and pressure jet oil firing.

The display will include two of the new 'Turbo' series of cast iron sectional boilers for gas or oil firing. With outputs ranging from 330,000 Btu/h to 1,740,000 Btu/h, the 16 models in this series incorporates a number of important design features leading to minimal boiler maintenance and maximum thermal



● The Quietscroll fan from Nu-Aire.

efficiency.

Another item on Stand No. IF26 will be a gas-fired 600,000 Btu/h steel vertical tubed hot water boiler from a range of four, available also for oil-firing and designed to allow the steel sections to be passed through average door openings.

Alongside the oil and gas fired boilers will be a TGC 450, representing Trianco's well-established anthracite-burning gravity feed commercial range.

TGC boilers ensure optimum heat absorption to water and are available in a choice of outputs from 300,000 to 900,000 Btu/h. Another anthracite-burning boiler, the G150, and the

TRO 50/73 pressure jet oil boiler complete an exciting display by Trianco.

## The Distillers Company

The Jetfreezer CO<sub>2</sub> pipe freezing technique and equipment will be featured on the Distillers stand for the first time at Hevac on Stand No. 2H30. This time and cost saving method will be demonstrated daily.

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# ROBEY



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Jetfreezer is designed for work on pipes up to 4in (100mm) n.b. enabling jobs to be carried out quickly and efficiently without draining down the system. Using this technique a secure ice plug is formed in the pipe, or two simultaneous freezes can be made if it is necessary to completely isolate a section or component from the remainder of the system. Maintenance, repair or extensions can then be effected without draining.

The easy to use Jetfreezer equipment is available from appointed distributors throughout the country.

## Teknigas

Teknigas, the specialist burner and control manufacturers have developed, over the last 18 months or so, a number of new products.

The range of Tekni Solenoid valves for both domestic and non domestic applications has been proven and well accepted over many years. Teknigas are now introducing a number of new valves to the range in sizes up to 2" BSP with fast and slow opening characteristics and flow limiting devices. Further additions are both ½" and 1" double valves. A new ½" "high flow" valve is also available and this will allow manufacturers to standardise on range rated appliances in the interest of economy. The same body can also be tapped ¾" BSP so giving an exceptionally compact and competitive fast operating ¾" solenoid valve.

To operate in conjunction with these is a range of domestic and non domestic flame control sets covering the widest possible scope of applications. Starting with the fully automatic control for domestic central heating and space heating appliances, of exceptionally advanced technology,

cal design, and progressing up to the industrial blown burner market with a fully automatic and sequential control, the new Tekni range covers the full spectrum of atmospheric and forced draught burner applications.

This latter control incorporates, once again, the most advanced technology to give the same high standard of reliability that is synonymous with all Tekni products. In addition, the Teknitronic range of automatic and semi automatic controls for commercial and industrial applications has been replaced by updated models.

Added to this new era of Tekni controls are the well-known range of Teknitherm and Teknipilot thermoelectric flame failure valves which have been widely used for many years. This product range has, in itself, been enlarged over the last 18 months by the introduction of the CTB series of multifunction controls and single function flame failure valves and accessories.

The diverse range of Tekni thermocouples has now been suitably reduced following the introduction of their Universal thermocouple type 7000 which is very widely used, both in the UK and overseas.

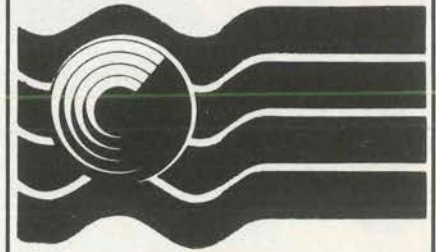
Teknigas also boast one of the most extensive ranges of atmospheric burners for practically any domestic and non-domestic application giving them the singular distinction of being the only UK manufacturer of both burners and controls.

## Triflow

Triflow Limited, is one of Britain's major manufacturers of pipe fittings.

On display on their Stand No. 1D56 in Hall 1, will be their full range of end-feed, solder-ring and compression

## EXPOCLIMA Hevac 82



## Exhibition preview

sion fittings, for use with copper tube to BS 2871 and stainless steel tube to BS 4127.

The end-feed and solder-ring capillary fittings are made of copper and gunmetal, both non-dezincifiable materials, thus allowing their safe use in all areas. The solder-ring fittings contain the correct amount of tin/lead solder to enable the plumber to make a neat, leak-free joint quickly and simply. The integral solder-ring cuts out solder wastage and reduces labour costs. The end-feed fittings provide neat compact joints, and their low cost contributes to economical installations.

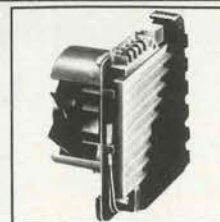
Manufacture to BS 864 Part II, in a range of sizes from 6mm-54mm, both the solder-ring and end-feed ranges have recently been extended, and the new items will be on display at Hevac for the first time. Of particular interest to the trade in Ireland, is the Triflow range of solder-ring capillary fittings in Irish sizes for use with copper tube to IS 238:1980.

Also being shown for the first time at this Exhibition, is the new Triflow range of compression fittings. For installation where a reliable pipe joint

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- High Performance & low sound two ranges with 95 & 130 m³/h.



# EXPOCLIMA Hevac 82



## Exhibition preview

is required without the use of solder or application of heat, Triflow compression fittings are ideally suited. A perfect joint can be securely made in seconds, and, if required, may be disconnected and re-made with confidence. The fittings are manufactured from hot brass stampings, and satisfy the requirements of British Standard 864 Part II.

To complement their range of pipe fittings, Triflow now supplies a range of plumbers' accessories — high quality solders, flux and cleaning brushes.

Triflow capillary fittings are available in the Republic of Ireland from Hevac Ltd., in Dublin and Cork.

## Xpelair

Xpelair's new DX100 range of six toilet ventilators is to be seen at Hevac, shown alongside the com-

pany's comprehensive range of extractor fans, Whispair ceiling sweep fans, fan controllers, cooker hoods, fan heaters, humidifier and food waste disposer. Xpelair is exhibiting on stand no. 3T50 in Hall 3.

The DX100 toilet ventilators are designed to provide an escape route for unwanted smells in the toilet: via the window, the wall or a ventilation shaft, with the option of a timer for each model. The DX100 toilet ventilator is the only British made product range of this type on the market.

These slim-line toilet ventilators, with 100mm (4 inch) diameter impellers, measuring only 155mm (6 inches) square and protruding only 43mm (1¾ inches) into the room, carry Xpelair's two-year guarantee and are unmatched in quality design, performance and low sound level. All DX100 ventilators are supplied with the necessary fittings such as screws, wall plugs, wall sleeve, back draught shutter or air deflector, as appropriate.

Suitable for installation in toilets with an outside wall or window, its compact design makes it ideal for rooms where useable window or wall space is at a minimum. The version designed for use in ventilation shafts is seen as a valuable addition to Xpelair's important overseas sales where such ventilation shafts are common.

Each of the three variants has a timer option providing a period of controlled ventilation after the room has been vacated and also incorporating a "short stay" delay allowing the room to be used briefly without the fan commencing its cycle. All models, except the cord operated DX100G,

are suitable for remote switching.

The fan engineering and styling is a credit to Xpelair's Birmingham-based design team, and the resultant fan is simple to install, only requiring a 115mm (4½ inch) hole through a wall or a 125mm (5 inch) hole in glass. The easy-to-clean inner cover/motor assembly can be quickly removed and in so doing automatically isolates it from the electrical supply.

Electrical connection is simplified by the use of two core cable as the fan is double insulated and, because the terminal cover is hinged and its fixing screw captive, there are no components to fall or lose.

Apart from these new fans visitors can see the complete range including axial and centrifugal fans for window, wall, ceiling or roof installation. Now produced in a popular soft white colour, they combine functional and aesthetic design for domestic or commercial applications. Back draught shutters are fitted as standard and the extractor fans carry the Xpelair two-year guarantee.

New technical literature is available on the stand for Xpelair's Whispair ceiling sweep fans used in an energy saving role. It demonstrates how these fans, operating at low speeds, can reduce the heat loss through a roof and therefore reduce fuel costs.

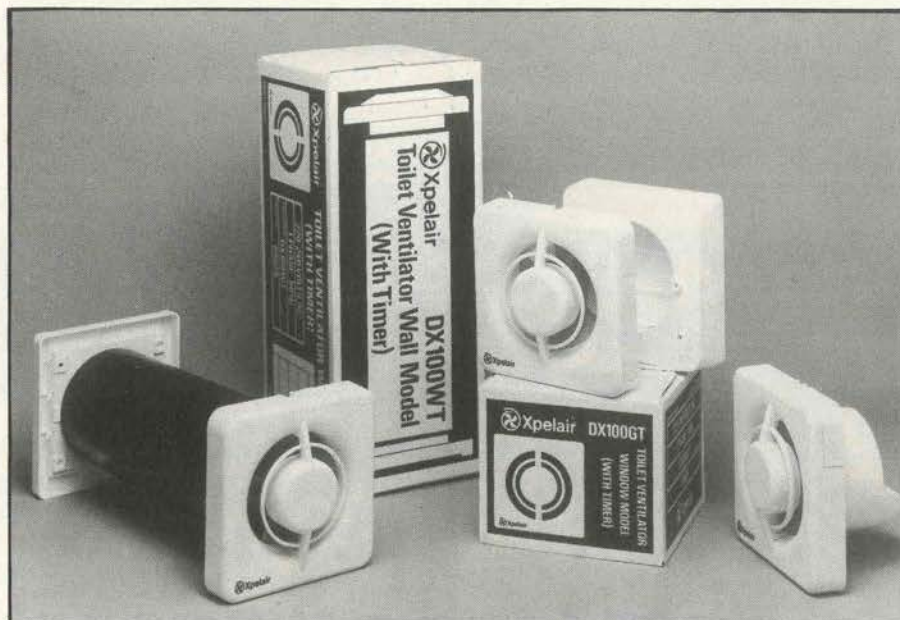
## Eberle

Four new series of electronic thermostats are among the products being shown for the first time by Eberle & Co of Harpenden, Herts on Stand IG38 at the Hevac. These latest additions to the range of thermostats manufactured by Eberle in Nuremberg, illustrate the increasing impact of solid-state electronics on domestic, commercial and industrial environment control equipment.

In addition to thermostats, Eberle is also exhibiting a large variety of timing devices, relays and contactors, process control equipment and programmable logic controllers.

## Nu-Way

At Expoclima Hevac '82, Stand No. 1D52, Hall 1, Nu-Way Heating Plants Ltd., will be showing a selection of Oil, Gas and Dual Fuel burners from a comprehensive range of combustion equipment. All units are fully automatic in operation and complementary oil and gas burners



● The Xpelair DX100 range of toilet ventilators.



are available with capacity from 50-8,000 kW (50,000-30,000,000 Btu/h).

A major feature of the display is the new 'EG' range of gas burners.

Included among the exhibits are the new EG1, EG5, EG13, EG25 and EG60 gas burners; CL1, CL3, and CL4 on/off and high/low class D oil burners; CH and CX burners specifically designed for use with Class F and G fuel oils.

A CDL-25B high/low dual fuel burner; PF5HC modulating burner; industrial furnace burners and a GB3500 gas pressure booster set complete the equipment display.

## Matthews & Yates

Air handling units with heat recovery facility, centrifugal fans, axial flow fans, space heaters etc., are all products being exhibited by Matthews and Yates.

This year sees the centenary milestone in the life of M & Y and exhibits show the company's modern approach to air movement based on the experience of the past 100 years.

A CPR. 450 air handling unit will be on show in working order and visitors to the stand will be able to operate it themselves from a consol. This provides a first hand experience of the advantages of volume control, variable speed motors and variable inlet vanes.

A smaller air handling unit will also be exhibited which demonstrates the run around heat recovery principle.

A selection of axial flow fans from the standard 13 model range will be prominently displayed.

Centrifugal fans with varying configurations and impellers will be available for inspection together with a working model of fan application in the pottery industry.

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## NEW PRODUCTS

### Finheat Launch Heat Recovery Unit

A new modular heat recovery unit, designed to transfer up to 70 percent of waste heat from exhaust air to fresh intake air in commercial heating systems and industrial processes, has been introduced by Finheat Ltd.

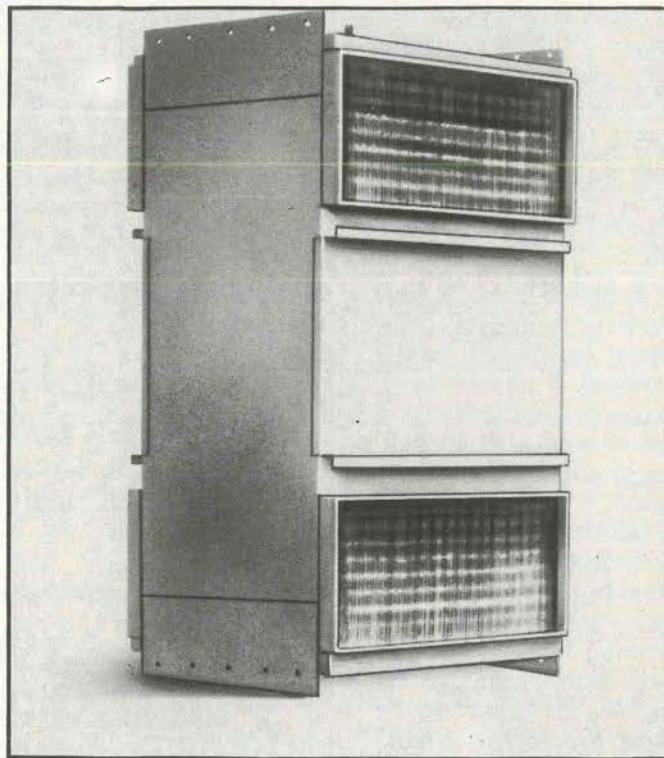
Called Z-Duct, the compact heat exchange modules manufactured by S & P Coil Products, have been developed for air-to-air energy recovery applications in factories, schools, stores and hotels.

These units can be integrated with air handling plant in any situation where fresh air is drawn into a building to replace stale or contaminated air of a higher temperature. By transferring heat from the outlet to inlet air stream, Z-Duct fuel consumption and equipment capacity required to condition intake air.

Designed on simple principles for economical, high efficiency heat recovery, Z-Duct can be used in new or existing installations where hot air exhaust ducting can be adjacent to intake ducting.

Each Z-Duct module consists of corrugated heat transfer plates mounted in a steel casing with counter-flow inlet and outlet ports for exhaust and fresh air streams. The ports are flanged for simple duct connection and air streams are physically separated to prevent cross-contamination. Removeable panels provide access for maintenance and an integral drip pan and drain allow for removal of condensed liquid. A built-in heater option will deal with freezing air intake temperatures.

The basic module measures 990 x 445 x 575 mm and is nominally rated



● The new (Z Duct) modular heat recovery unit from Finheat Ltd.

at 0.5m<sup>3</sup>/sec flow capacity. Banks of Z-Duct modules can be bolted together to accommodate any air flow rate. Units constructed in aluminium will operate at up to 230°C and stainless steel modules at up to 750°C.

### Access Shower Tray

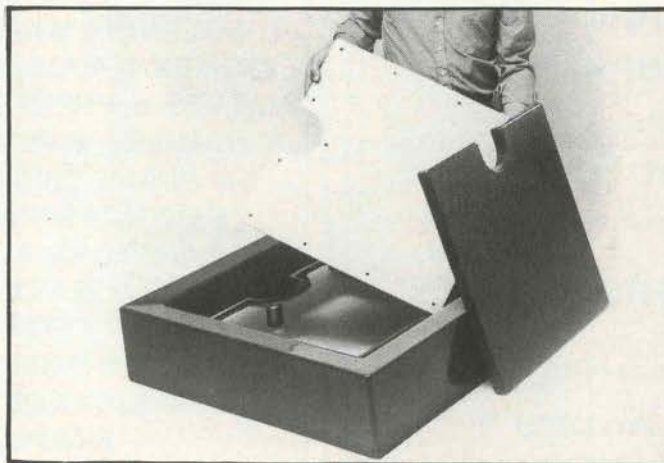
The Majestic Shower Company recently launched a new shower tray with the unique feature of a removable base; which can be

easily lifted off while the rest of the tray remains in position. This facility means that complete access to the plumbing under the tray is available during and after installation.

The new Majestic Access tray is made in three parts:

1. The outer part of the tray which includes the sides.
2. The structural floor which is screwed to the outer part with machine screws which compress the water proof seal.
3. The non-slip base which is placed over the structural floor.

When the tray is installed



● The Majestic Access shower tray with water tight sublid and non-slip base.

no fixings or joints are visible.

The Majestic Access tray solves the not uncommon problem of having to destroy the installed tray and surrounding tiles to service the showers' waste plumbing.

Variations of the standard Access tray are available with flanges around the sides to be attached to walls. These are screw fixed and then tiled over. This feature ensures that the tray cannot separate from the walls leaving a gap for water to run down.

Further details from Majestic Shower Company Ltd., The Square, Sawbridgeworth, Herts. CM21 9AE Tel: Bishops Stortford (0279) 725500.

### Walker's Hi-Tech RAC

The Hi-Tech room air conditioner is the latest in the comprehensive range of room air conditioners to be announced by Walker Air Conditioning Limited.

The computerised Carlyle Hi-Tech incorporates all the latest innovations in air conditioning technology, both in terms of interior craftsmanship and exterior styling.

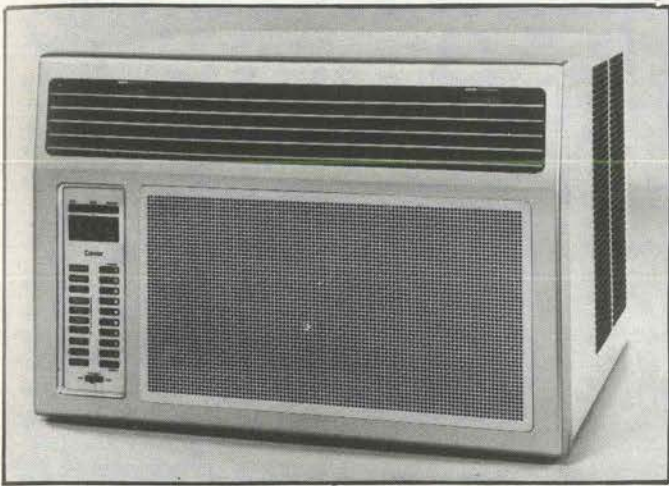
Designated 51FM, there are two models available with cooling capacities of 3.5 and 5.1 kW, for which Carlyle claim an e.e.r. as high as 10.0.

Fully automated controls allow the occupant to programme daily comfort levels. A solid state touch control system and integral quartz digital clock allow pre-selection times for the Hi-Tech to turn itself on or off and to operate at the speed and temperature level to meet individual requirements.

The futuristically designed front panels incorporate the computerised controls. One of ten temperature levels can be selected. The 'clock' button sets the digital time display. 'Fan Speed' control allows pre-selection of one of four fan



## NEW PRODUCTS



● The Carlyle Hi-Tech RAC.

speeds and automatic on-off timed operation is controlled by the 'program' buttons. A 'thermo sentry' allows pre-selection of a maximum room temperature and the unit will automatically operate when this temperature is exceeded. Additional controls allow fresh air vent or stale air exhaust operation, as well as full cooling or fan only operation.

Internal innovations include aerodynamic design fan wheels which put the unit amongst the most silent RAC's currently available on the market; high efficiency rotary compressors save energy; aluminium coils manufactured using the latest ultra-sonic brazing techniques for long leakproof service; frost free control; outside grille protection, vortex condensate system to remove condensate and improve performance by continually bathing the coil face in recirculated condensate; reusable polyurethane filters and built in sound reducers.

### Helios R9 Minifans from GKN

GKN have launched a brand new range of Helios R9 Minifans for bathroom and WC ventilation.

The Minifans are suitable for duct, wall, and window mounting and are available in two ranges, the Standard

with extract performance of 95m<sup>3</sup>/h, and the Super with extract performance of 130m<sup>3</sup>/h. The ranges provide a total of eight models, each with 100mmØ (4") impeller, measuring 140mm (5½") sq. and short depth of 58mm (2¼").

The Minifan is finished in two colours, beige with a dark brown grille, and each is fitted with a control light. These ventilators are manu-



● The new Helios R9 minifans from GKN Autoparts Ltd.

factured to the highest German standards with modern slimline design, high performance, low sound level, are continuously rated, and can be installed in any position.

They are easy to install, easy to use, and very easy to clean.

In each range the models can have electrically operated shutter or timer options, and can be used in windows with the FES9 kit, or walls with the WES9 kit. The built-in timers enable over-run periods from 2-8 mins to provide a period of ventilation after the room

has been vacated.

Further details from GKN Autoparts (Ireland) Ltd., Camac Close, Emmet Road, Inchicore, Dublin 8. Telephone: (01) 781700. Telex: 30830 ASAP.

### Jet Lag from Marley

The Plumbing Division of Marley Flooring and Plumbing Ltd., are now marketing a unique closed cell, flexible pipe insulation material known as Jet Lag which is extruded from polyethylene to a high technical standard and tested to BS 4735, DIN 4102.

Jet Lag is available in attractive 1 m. DIY display packs and 2 m. trade cartons from all hardware stores and builders merchants throughout Ireland.

Fire retardant, waterproof Jet Lag is the ideal insulation for central heating and cold water services in homes, industrial and commercial properties. Heat loss from hot water pipes is reduced by 75% and maximum protection against frost is provided for cold water systems.

The closed cell structure of the material used in the manufacture of Jet Lag eliminates water soakage and guards against any risk of freezing.

Illustrated Jet Lag leaflets, samples and detailed installation instructions are available from the sole distributors: Marley Flooring and Plumbing Ltd., Laraghcon, Lucan, Co. Dublin. Telephone: (01) 280691.

### Single End Connection

A solution to the problem of making single end connections to radiators with back connections is now available from Danfoss Ltd. with the introduction of the new range of RAK radiator manifolds.

The new RAK series manifolds are particularly suitable for microbore systems where double panel radiators are specified, and can be used with either Danfoss S or N series sensors. Type RAKE is designed for single-pipe loop systems, and type RAK is for 2-pipe systems.

The complete manifold comprises four separate sections — valve body, manifold pipe, manifold and 10mm, 12mm or 15mm compression fittings — to simplify stocking and ensure that all versions of the manifold can be supplied from basic components. Versions are available with or without an isolation valve, and a special valve body is available to facilitate easy mounting where pipes come out of the wall.

Further details from J. G. Sampson Ltd.

### Qualitair Product News

Designed to meet architects requirements for a "through the wall" complete air conditioning unit, the Qualitair model QPM fits snugly into a standard 280mm wall and blend smoothly with the exterior wall surface. The unit can be mounted at high or low level. Minimum height from the floor is seven inches (18 cm). No bulky condenser or unsightly chassis projects from the building — the complete condensing section is contained within the wall. Provision has been made for various structures and wall thicknesses that may be encountered.

The slim room section — only nine inches (23 cm) deep — has teak veneered end panels, a decorative cabinet of brown Roebuck grained vinyl, laminated to galvanised steel, chromium plated full length grill and spun aluminium controls. The grill can be positioned to provide top or front air discharge. This full sound insulated attractive cabinet covers an air conditioning



## NEW PRODUCTS

unit manufactured from hot dip galvanised steel components, all precision engineered and assembled to the company's exacting standards. Slow speed fan moves the conditioned air over a large face area cooling coil to provide maximum comfort with minimum sound levels.

The wall section contains compressor, fan motor and condensing coil.

The aesthetically recessed control panel contains switches for the thermostat and fan. Simply select the temperature required, choose fast or slow fan speed and your Qualitair air conditioner will automatically maintain your comfort conditions. A third control enables fresh air to be introduced and stale air removed as required.

All components are easily accessible for servicing from within the room as the unit slides out of the wall or opening for this purpose. The satin finished aluminium grill (optional) remains in position as a weather and security guard.

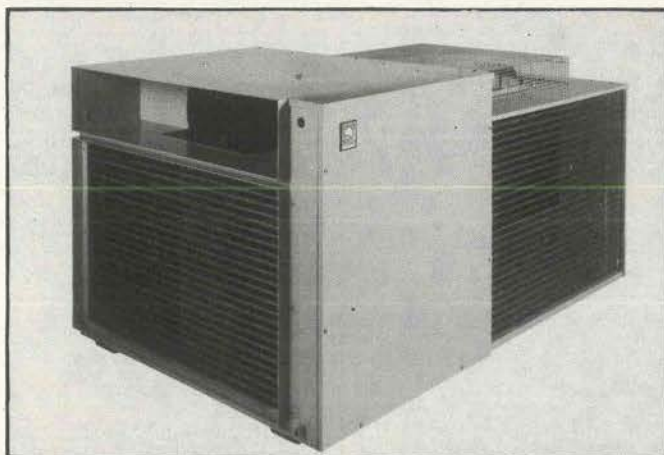
Two models are available having nominal capacities of 10,000 Btu/hr and 12,700 Btu/hr.

### Horizontal Packaged Air Conditioners

The Qualitair QHU is a packaged air conditioner designed for mounting in a horizontal position at roof or ground level. Models are available with cooling capacities of 50,000 Btu/hr and 82,000 Btu/hr.

The unit is designed as a completely weather proof container built to withstand the rigours of continuous operation even in the most adverse conditions. The rigid construction and high quality metal finishes of quality and units provide strength and durability. The evaporator section is lined with high density, fire retarded foam, contributing to the overall quietness of operation and high thermal efficiency.

The controls box, mounted inside the unit and accessible via the side panel, contains all the electrical and refrigerant controls.



● The Qualitair QHU horizontal packaged air conditioner.

All adjustments to controls can be made in this compartment while the unit is running. This makes for ease of service and commissioning. Standard controls include crankcase heater, control relay, high/low pressure controls, charging of service valves, sight glass, liquid line strainer and drier.

The unit can be mounted inside or outside the building at ground level or on a flat roof. The unit is designed to operate continuously in ambient temperatures up to a maximum of 122°F. In temperate climates it makes for more efficient operation of the equipment to locate the package unit in a sheltered location where the rejected heat from the condenser can be utilised to maintain higher ambient temperatures.

For further information please contact Exclusive Distributors in the Republic of Ireland, Hall-Thermotank Ireland Limited, Hall House, Main Street, Rathcoole, Co. Dublin. Telephone (01) 580311 Telex 30943.

## Virax Bender and Threader

Virax Ltd. have introduced an electrically powered hydraulic pipe bender which shares many acces-

sories used with the Virax hand-operated models.

Capacity of the type 2408 bender is from 3/8 to 2 in. (or with adaptors up to 4 in.) gas pipe dependent on the accessories fitted and it is available in three forms: (i) with a reinforced cheek, (ii) with an open cheek, mounted on a tripod and (iii) with a sliding cheek.

Simple assembly without tools ensures that the unit can be quickly made ready for use whatever size of pipe or cheek configuration is required. Safety is maintained by the components locking together automatically as the load is applied. Over extension of the ram is obviated by a relief valve in the oil circuit. A built-in valve prevents loss of oil due to changes in atmospheric pressure.

The bending operation is controlled by means of an on/off switch on the motor housing. Adequate bending loads are available to cope with the most difficult bending problems and an automatic cut-out is shortly to be made available to cater for continuous bending operations.

The type 2408 bender can be supplied in a variety of different boxed sets or as individual units to add to users' existing equipment.

The 1605 pipe threading machine has a capacity of 1/2 to 2 in. diameter pipe as standard and can machine right or left hand BSPT or NPT/API threads. A cam device provides a quick change from one pipe size

to another. Attachments are available.

For further information contact: Combex Engineering Ltd., 3 East Road, East Wall, Dublin 3, Phone: 748371/2.

## ESB, Oil and LPG Companies to Lose Share of Market

continued from page 9

Mr. P. O'Driscoll who was previously with CTT where he was assistant Chief Executive. Given the appalling state of the showrooms in D'Olier Street and the tasteless window displays, I suppose the Gas Company are considering exporting their expertise! It would appear that the only survivor of top management in the early seventies was the Financial Director, Mr. J. Drury-Byrne, previously with Plessey (Ireland) Ltd. and an ex tennis star.

All in all this is not a picture of a settled management team yet it is the very team that is about to give Kinsale Gas for the Dublin area. In view of the vacillation of the Department of Energy one feels that they too have their doubts. Is the "Gas Company" the company that is going to provide competition to the E.S.B. in the domestic and industrial area? I hope so but I have serious doubts. Is it the company that will challenge the coal monopoly of C.D.L., and the multi-national oil companies in the domestic and industrial heating market? I hope so but I again have my doubts.

Many others also have doubts. But they will be given it so let us all hope — for everybody's sake — that they can get their act together.

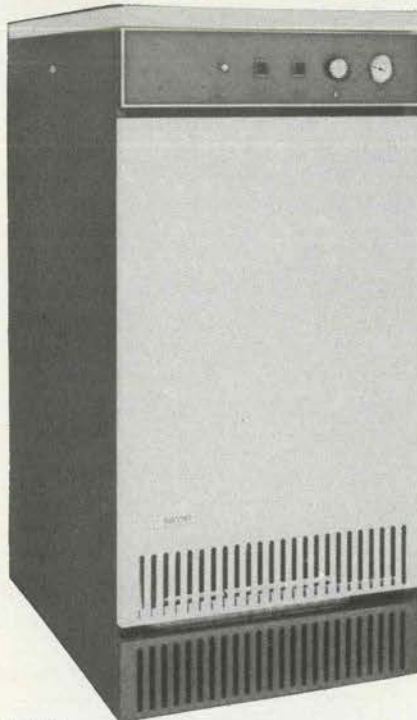


# THE SIME (RIO) FAMILY

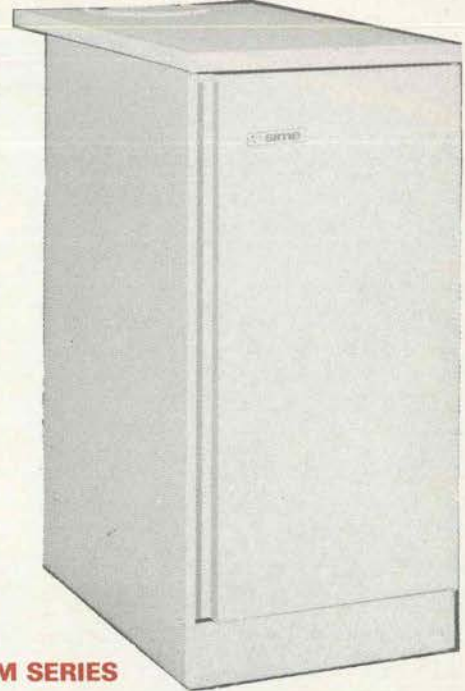
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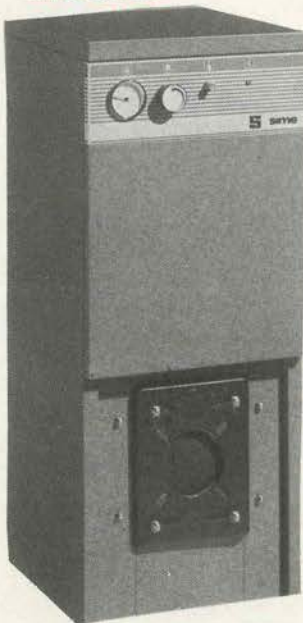


SGM SERIES

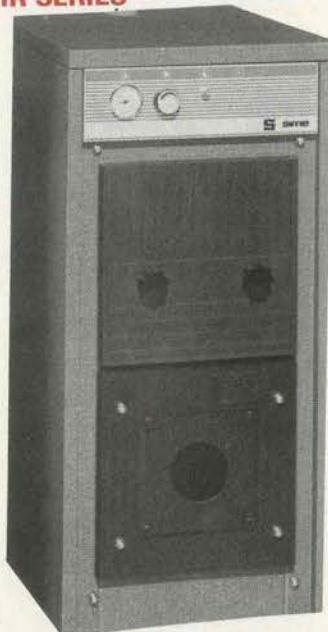
**Models Available: Industrial:-**  
SGP 60 Output 52.3 - 69.8 KW  
SGP 80 Output 69.8 - 93.0 KW  
SGP 100 Output 87.2 - 116.3 KW

**Domestic:**  
SGM 18 Output 25.5 KW  
SGM 30 Output 30.0 KW  
SGM 36 Output 43.0 KW  
SGM 45 Output 45.0 KW

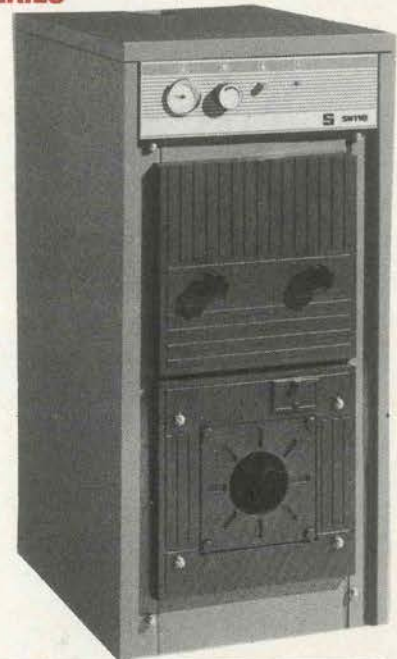
## AR SERIES



## IR SERIES



## 2N SERIES



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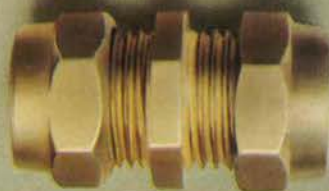
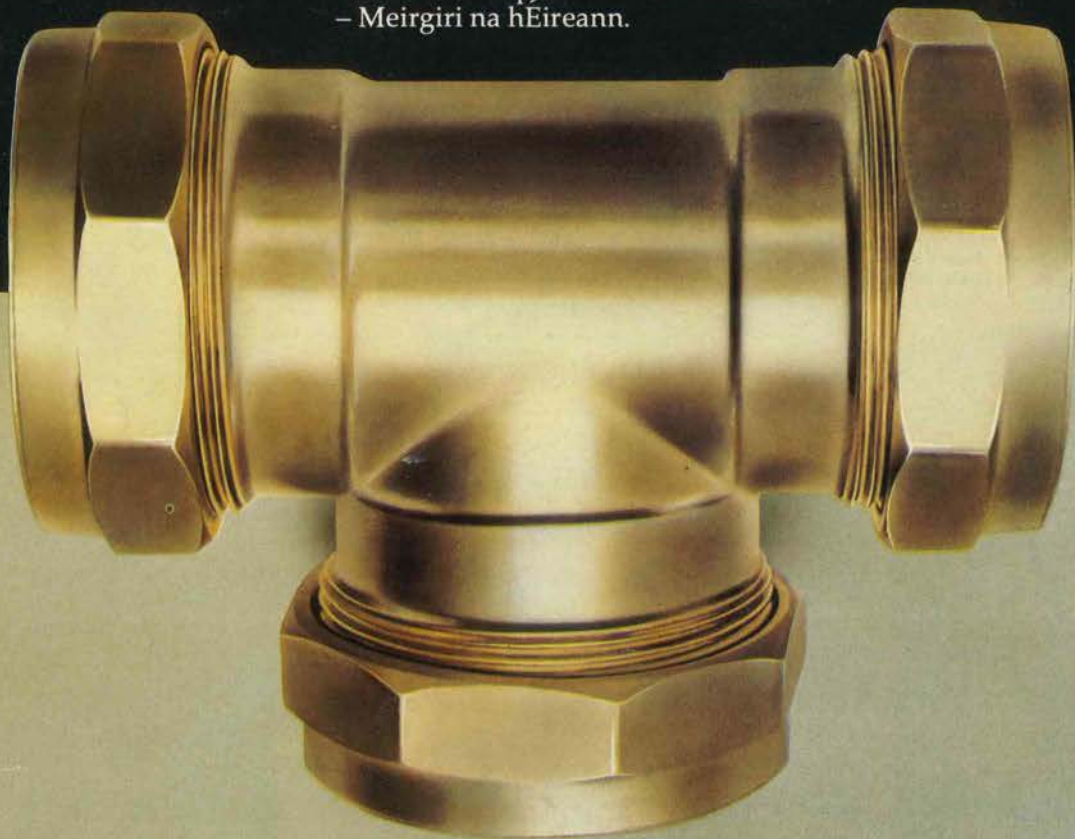


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